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May 8, 2002

## DBS Signals

### Undergoing a Renaissance of Growth

At a present count of approximately 18 million subscribers, the direct broadcast satellite (DBS) industry, led by DIRECTV and EchoStar, appears to be shifting into a higher gear in its long fought battle with the cable industry. Despite the nearly ubiquitous availability of digital cable and cable modems, the DBS industry is sustaining strong subscriber gains while continuing to derive the majority of its growth from cable in the large urban/suburban markets.

- In our view, this continued trend has been driven by a dramatic transformation of the DBS product offering vis-à-vis cable over the last two years in three respects: local channel availability, multi-room equipment cost reduction and a more favorable monthly price-value comparison.
- In addition to appealing more broadly to the mass market in urban/suburban parts of the country, DBS has capitalized on the early adopter demand for two potentially explosive new product categories—HDTV and PVRs—leveraging its typical lead-to-market advantage over cable through national reach and retail distribution advantages.

These factors, combined with a transformation over the last two years of its sales and distribution models, have resulted in an improving quality profile of subscriber growth and dramatic reversal of the industry's key operating metrics—ARPU, SAC and churn—from a deteriorating trend one year ago to a rapidly improving one currently.

The aforementioned improvements underlie an explosion in profitability that the industry is undergoing, evidenced both by the breakout in EBITDA, spurred by significant operating leverage, and an imminent pending turn toward substantial free cash flow and earnings generation, given the inherent fixed capital cost leverage of the business.

The prospects for consolidation under the proposed merger of EchoStar and Hughes Electronics/DIRECTV would substantially leverage the aforementioned subscriber growth dynamics, by extending local channel availability from 60% of the U.S., currently, to the entire country, and profitability characteristics by reducing churn and SAC.

Overall, these trends highlight the sector's extremely attractive valuation and investment outlook. Specifically, EchoStar and Hughes/DIRECTV are selling at 10–11 times 2003 EBITDA, while EchoStar is also trading at a traditional P/E multiple of 25 times next year's forecasts, versus five-year compound annual growth prospects of 20%–30% beyond 2002. As a result, we reiterate our ratings of Strong Buy on EchoStar (DISH) and Buy on Hughes Electronics (GMH).

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## Viewpoint

### DBS Undergoes a Renaissance of Growth...

At a present count of approximately 18 million subscribers, the direct broadcast satellite (DBS) industry, led by DIRECTV and EchoStar, appears to be shifting into a higher gear in its long fought battle with the cable industry. Our expectations a year ago (see our May 16, 2001 DBS Industry Report) anticipated a slowing in DBS subscriber growth coupled with an underlying shift in the composition of growth to the rural parts of the country as a result of cable's widespread deployments of digital cable and cable modem service in the urban/suburban areas. In dramatic contrast, the DBS industry is actually sustaining strong subscriber gains while continuing to derive the majority of its growth from the large urban/suburban markets. These factors, combined with a transformation over the last two years of its sales and distribution models, has resulted in a dramatic reversal of the industry's key operating metrics—ARPU, SAC and churn—from a deteriorating trend one year ago to a rapidly improving one currently. The confluence of these aforementioned trends has paved the way for an explosion in all underlying profitability metrics—EBITDA, EPS and free cash flow—which highlight the sector's extremely attractive valuation and investment outlook.

### More Deeply Penetrating the Mass Market in Urban/Suburban Areas...

Since the DBS industry's introduction of local channels beginning in early 2000 into the top 36-41 markets of the country, which represent approximately 60% of U.S. homes, the majority of DBS growth has been derived from these markets. This includes approximately 70% of DIRECTV's subscriber additions coming from 41 of the top DMA markets where it offers local and an estimated 60% of EchoStar's growth derived from 36 of the top markets where it makes local available. While the dramatic uprising of cable over the last two years—resulting in 15 million digital cable subscribers with availability to 80% of the U.S. and 7 million cable modem subscribers with availability to 70% of the country at the end of 2001—was expected to significantly narrow DBS's window of opportunity in urban/suburban markets, the level of DBS growth in these markets has not abated (as gross additions in the top 40-45 markets has generally grown faster than overall growth). Further, DBS churn in the urban/suburban markets (where local is available) is reportedly lower than in rural areas, suggesting an even higher percentage of net additions are being derived from these areas, as outlined in Figure 1. **As a result, we expect DBS industry net additions of 2.6 million in 2002, down only modestly from last year's 2.9 million net additions, to finish this year with nearly 20 million industry subscribers, as displayed in Figure 2.**

In our view, this continued trend has been driven by a dramatic transformation of the DBS product offering vis-à-vis cable over the last two years in essentially three respects:

- 1) **Local Availability**—As mentioned above, local channels became available over satellite for the first time in early 2000, following

passage of the Satellite Home Viewer Improvement Act in 1999, which provided the industry with a compulsory license to offer local signals, and industry consolidation in 1999 in the form of EchoStar's acquisition of ASkyB and DIRECTV's acquisition of PrimeStar, which essentially doubled the capacity of both satellite providers to roughly 500 channels. This eliminated the need for consumers in the top 36-41 markets to either keep the basic broadcast tier of cable or obtain an over-the-air antenna in order to receive local signals with DBS service, thereby unleashing significant pent-up demand for DBS service in the urban/suburban markets that continues today.

- 2) **Multi-Room Equipment Cost Reduction**—DBS equipment costs at retail were slashed several years ago and promoted with aggressive free equipment and installation offers. However, consumers were hit with a "sticker-shock" effect upon finding that the cost of second set receivers to wire additional TV's, along with installation costs for more than one set, resulted in over \$500 in upfront costs for the average household with 2-3 television sets. However, over the last year, DIRECTV and EchoStar have substantially reduced the cost for new customers to wire multiple TV's within a home, as DIRECTV now offers two boxes with installation for \$0-\$49 and EchoStar has successfully introduced an equipment rental for up to four boxes on one dish along with a discounted two box purchase offer similar to DIRECTV's (both DIRECTV and EchoStar require 12 month commitments under their respective offers).
- 3) **Monthly Pricing**—In the larger urban/suburban markets, basic cable rate increases that have followed plant upgrade completions have been as high as 8%-10% annually, while DBS prices have largely remained static. As a result, as shown in Figure 3 through a cross-section of cable prices across the larger U.S. markets, basic cable prices which include 60-70 analog cable channels have risen to an average of \$40 per month. This is actually at the level of the most popular DBS packages of DIRECTV and EchoStar, which include 160-170 channels of all-digital video service, 30-35 CD-quality audio channels and an interactive program guide. To equal DBS' product offering with the addition of digital cable, the additional \$10 digital access fee raises cable's pricing to \$50 versus \$40 for DBS (as shown in Figure 3).

The combination of these three changes in the DBS offering have dramatically shifted the price-value comparison between cable and satellite across a majority of the country in DBS' favor, in our view. Specifically, for the average household with multiple TV's in an urban/suburban market, the addition of local channels and reduction in equipment prices have eliminated historical disadvantages of DBS versus cable, while the pricing model differences have provided a strong incentive for consumers to switch from cable to satellite.

In segmenting the market as shown in Figure 4, by the end of this year, we estimate there will be approximately 20 million DBS subscribers and 20 million digital cable subscribers, or 40 million digital pay TV subscribers, out of a universe of 90 million multichannel subscribers (which includes 69



million basic cable subscribers and 20 million DBS subscribers). With only 105 million TV households in the country, implying multichannel penetration of 85%-90% currently, growth for cable and DBS will likely be centered on the remaining 50 million basic analog cable subscribers that don't take digital cable or DBS. To these remaining 50 million subscribers, we believe DBS currently offers a more compelling proposition to switch, as it has significantly more channels/better quality at the same price, while digital cable upgrades require an additional \$10 per month fee for the same increased value. This dynamic is corroborated by several recent studies that have measured consumer perception of value in the DBS product as significantly superior to analog and digital cable.

**Also reinforcing this trend of DBS over digital cable is evidence that digital cable subscriber growth is significantly slowing**, with industry net additions that rose last year by 20% to approximately six million appearing to decline roughly 20% this year to approximately five million. In particular, with growth from cable operators with the highest digital penetrations of approximately 30% showing even sharper declines, we believe digital cable has tapped the "low-hanging fruit" of premium/pay movie analog cable subscribers. This is based on indications that 60%-75% of digital subscribers are premium subscribers and the fact that premium/pay penetration of basic subscribers has traditionally averaged 30%, implying that the majority of premium customers (or 18.0%-22.5% of the 30% premium penetration) have already been upgraded to digital. While digital cable offers significant value to premium customers (by offering multiple screens, or multiplexing, of premium channels, i.e. 6-7 screens of HBO for the same price as one), the ability to tap non-pay movie households appears to be becoming more difficult, particularly given the more favorable price-value relationship of DBS, as discussed above.

### **While HDTV and PVR New Product Cycles Tap High-End Market**

In addition to appealing more broadly to the mass market in urban/suburban parts of the country, DBS has capitalized on the early adopter demand for two potentially explosive new product categories—HDTV (high definition television) and PVRs (personal video recorders, à la TiVo). This reflects the DBS industry's typical lead-to-market advantage over cable (which occurred with interactive TV services, for instance) by virtue of having both ubiquitous national coverage (implying the existence of one headend to upgrade for DBS versus 10,000 cable system headends across the country) and a massive retail distribution infrastructure to leverage.

**High Definition Television (HDTV)**—While still small in numbers, high definition TV sales have begun to take off, with an estimated two million HDTV's sold to date. Anecdotally, a high percentage of these high definition TV sales, which retail for \$3,000-\$6,000 apiece, are complemented with the purchase of DBS systems. DBS has piggy-backed on these retail sales by leveraging its technical advantage over cable of having an all-digital architecture, which yields a superior picture quality to digital cable, that appears to be highlighted on HDTV's. Recall that digital cable is actually a hybrid analog-digital product, with the core 60-80 basic cable channels still broadcast in analog form and the additional 100-150 new channels broadcast

in digital format, albeit at a high compression ratio (partially so as to not highlight a superior picture quality compared to the analog channels). Also benefiting from the sale of DBS with high definition TV's is the obvious incentive to retailers that are commissioned to push satellite sales and the early availability of additional high definition digital content from DBS, as discussed below.

While DBS is capacity-constrained in its ability to eventually carry all local programming in high definition, the inevitable widespread availability of HDTV local signals via over-the-air transmission obviates the needs to replicate the carriage over satellite. Based on the FCC's mandate for the conversion from analog to digital to be completed by 2006, at which point the analog spectrum of the broadcasters is to be reclaimed (provided that 85% of households have digital TV's), it will likely entail a requirement for over-the-air reception to be nearly ubiquitous (since the 10%-15% of U.S. households that receive over-the-air signals today instead of cable or DBS are not likely to be forced to take cable in order to get local channels). Note also that over-the-air digital signal reception has an all-or-nothing feature, as opposed to the potential "snowy" picture typically associated with receiving over-the-air reception via antenna today. Thus, as is the case today for DIRECTV and EchoStar, DBS high-definition tuners will have off-air receivers installed, which will allow nearly ubiquitous reception of high-definition local signals. Thus, we do not see any disadvantage to satellite longer term of being capacity-constrained to offer local high definition signals directly over satellite, with the ability to efficiently integrate DBS service with over-the-air HDTV local signals.

In fact, DBS has been able to exploit its normal first-to-market advantage over cable with HDTV by offering several national networks that have been produced in high definition, such as HBO and Showtime. Both premium movie channels, as well as limited pay-per-view offerings, are offered by each of the DBS providers in high definition, with DIRECTV also offering HDNet (a variety channel formed by Mark Cuban) and EchoStar offering the CBS network feed. Consumers are required to purchase an integrated DBS receiver/HD decoder, which retails for approximately \$500-\$700 that can be used with any HDTV. This incremental cost is also required for advanced digital cable set-tops with high definition capability, as Motorola and Scientific-Atlanta have begun shipping integrated boxes for approximately \$500 (with some operators like Charter and Comcast passing along these costs for an additional fee of \$10 per month), although availability today is limited to a very small percentage of the country.

**Personal Video Recorder (PVR)**—While video on demand (VOD) has been viewed as a significant competitive advantage for cable over DBS (as DBS is inherently disadvantaged with a one-way network and tight bandwidth constraints for interactive services), the early results on VOD have been lackluster. Meanwhile, the competitive response from the DBS industry of using PVR hard drives in the set-top is potentially proving to elicit much greater consumer interest, which leverages significant competitive advantages of satellite over cable. In addition to allowing for VCR functionality (pause, fast forward, rewind) of live television and advanced digital recording, PVR's will also soon allow the satellite provider to download a select number of hit titles to be cached on the hard drive. With a



hard drive currently able to store up to 80 hours of video, which should rise to over 100 hours in the near future given the apparent Moore's Law curve on storage cost trends, a PVR-enabled DBS receiver can easily store the top 20-30 movies and allow access on a VOD-like basis.

The DBS industry is aggressively moving ahead with integrating personal video recorders in receivers, such as TiVo with DIRECTV. EchoStar was the first to offer a receiver with integrated PVR functionality with its DISHPlayer product three years ago and expanded that functionality with the DishPVR 501 receiver last year, which offers 35 hours of recording time. The company's newly updated personal video recorder, known as the DishPVR 508, takes this one step further through the addition of an 80 gigabyte hard disk drive (versus 40 gigabytes in the DishPVR 501). This allows up to 80 hours of recording time, of which EchoStar has reserved 20 hours for caching interactive content, music, software, and advertisements.

With these product offerings, **EchoStar has already reached 500,000 subscribers with PVR-enabled set-tops and is targeting to reach one million by the end of the year.** Driving this, EchoStar plans to even more aggressively deploy the service in 2002, with the offering of a PVR-enabled DBS set-top for a mere \$100 all-in price (compared to free standard equipment currently with a 12-month commitment) and no required monthly fee. This compares to a stand-alone TiVo device that retails for \$399 for the equipment and \$12.95 per month for the service. While appearing to reflect a substantial subsidization of the hard drive cost, EchoStar's planned \$100 pricing actually reflects only a modest increase in subscriber acquisition cost, as the company has been able to engineer the hard drive costs down to nearly \$100 to integrate into its receivers. This is based on an inherent ability to eliminate duplicative memory and processing power costs between the stand-alone PVR (as in a separate TiVo device) and take advantage of its all-digital architecture.

The latter aspect, in particular, highlights a significant advantage of DBS over cable in the integration of PVR technology into set-tops. This reflects the fact that digital cable set-tops are actually hybrid analog-digital boxes that require an inherently higher cost to implement hard drives due to the need to include an additional analog-to-digital converter in the set-top, at an additional estimated \$50-\$100 cost currently. (This is on top of the already higher cost of digital cable set-tops at an average of \$250 compared to DBS receivers at slightly over \$100.) In the case of satellite receivers, which are all-digital, the hard drive records the digital bit stream directly from the satellite, eliminating the need for an extra converter. These factors also provide for much higher quality recording and video output on the television for satellite, or result in the alternative trade-off of requiring significantly greater storage in the hard drive for a cable set-top (or stand-alone PVR) in order to compensate for lesser recording quality.

As in the case of HDTV sales, **DBS has been able to leverage its significant national retail distribution infrastructure to take a several year head start over cable's deployment of PVR technology.** Exacerbating this delay on the cable industry side has been the sluggish pace of innovation from the industry's two main set-top suppliers—Motorola and Scientific-Atlanta—which have stymied open standards from developing that would drive down



set-top box costs (which are more than twice the level of satellite, as mentioned above), open up retail distribution and stimulate technology improvements. Thus, as several cable operators have defensively begun ordering PVR-integrated digital set-tops, the cost of these boxes in the \$500-\$650 range and lack of retail distribution have resulted in a \$10 monthly fee, which further extends the pricing gap between DBS and digital cable, outlined above.

### **While Broadband Remains a Disadvantage, DBS Is Making Strides**

Broadband remains the satellite industry's main Achilles' heel vis-à-vis cable, although the industry is making strides towards addressing its disadvantage in this area. **Satellite transmission of two-way data has long been cost disadvantaged** in two critical respects—space segment costs have made the cost per bit, and ultimately per subscriber, prohibitively expensive, while the ground segment costs to add a transmitter for return path capability to a traditional one-way receiver has pushed equipment costs into the \$600-\$800 neighborhood. EchoStar and Hughes have been offering two-way high speed Internet access over Ku-band satellite frequencies through DIRECTWAY and StarBand, respectively, which have garnered 110,000 subscribers and 40,000 subscribers, respectively. The product is packaged in the form of an integrated dish (which is elliptical at 21-24 inches across) through which the consumer can receive digital video to the TV and high speed data to the PC with download speeds at about 400 kbps and upstream throughput of 128 kbps. The product is deployed through the use of current generation Ku-band satellites, with upfront equipment pricing at \$600-\$800 and monthly pricing in the \$60-\$70 range, reinforcing the aforementioned major cost disadvantages. These factors have relegated marketing efforts toward rural areas, where competition from DSL and cable modems is largely non-existent.

**Ku-band satellites have been viewed as interim technology until the evolution of Ka-band frequencies with next-generation satellites**, highlighted by EchoStar's recent decision to discontinue selling the StarBand product. Hughes has led the most aggressive Ka-band effort through its \$1 billion-to-date investment in SPACEWAY, which is planned for commercial launch in 2003. SPACEWAY promises two-way interactive capability, with bigger payload satellites, increased capacity and spot-beam technology (to allow frequency reuse) to allow faster speeds and a reduction in effective costs per bit, or per subscriber (based on an estimated 8-10 times increased efficiency of satellite capacity). EchoStar had an investment in WildBlue Communications, which was planning to launch a Ka-band service this year, although this has been written off based on funding shortfalls. Both DIRECTV and EchoStar have obtained Ka-band frequencies at neighboring locations to their primary slots, setting up the eventual possibility of integrating bandwidth on demand applications like VOD, interactive games, etc., with the traditional television services on one dish.

**In the more urban areas, where satellite technology is likely to remain disadvantaged, DBS and DSL (digital subscriber line) technologies appear to be logical complements** against their common competitors in cable. The limited bandwidth and distance restrictions inherent in DSL's twisted pair copper architecture cannot currently provide video service cost effectively,



while DBS, with its broadcast architecture, is extremely cost effective at broadcasting video, but relatively inefficient at providing point-to-point communications, like internet access. Recognizing these logical synergies, EchoStar recently signed agreements with SBC and Earthlink, which entail offering consumers a bundled package of DBS and DSL with a \$10 discount off the combined price. The bundled DBS-DSL product pricing could essentially blunt cable's digital video-cable modem bundle from a consumer standpoint, which also reflects a \$10 discount (as purchasing cable modem without basic cable typically entails a \$10 higher price point). While DBS-RBOC relationships in the past have generally been unsuccessful, as in the case of DIRECTV's deals years ago in which Bell Atlantic and SBC agreed to resell DIRECTV service, and the pair cannot realize the benefits of leveraging the same network as cable does, we believe these alliances offer the potential to narrow DBS' major disadvantage vis-à-vis cable. This stems from the increasing necessity by the RBOCs to find a video alternative, in light of cable's gradual encroachment with cable telephony, which has been demonstrated by Cox and AT&T Broadband to lead to a 30% share of the local telephone market for cable within a few years of launch through discounting.

From DBS' perspective, the RBOC relationships also offer a path to eventually offer voice telephony, either through direct bundling agreements with the RBOCs or through emerging voice over DSL technology. Further, DSL appears to be a longer-term viable solution to providing a high speed, real-time return capability to the DBS video product offering. As an example, EchoStar's latest top-of-line receiver, the DISH Network PRO 701, is equipped with a built-in DSL modem, allowing for broadband Internet access on the television and more advanced interactive features. Over time, the integrated DSL modem will allow the possibility of offering true server-based video on demand as compression techniques advance to enable TV-quality video over the 500 kbps guaranteed speed capability of most DSL technologies. As a result, we view the recently announced bundling arrangements by EchoStar as the first of a gradual set of partnerships to be formed with all the RBOCs in order to create a national alliance versus cable.

### **Highlighting the Industry's Improving Sub Growth Quality Are Improvements in All Key Operating Metrics...**

Highlighting the industry's improving subscriber growth quality characteristics are improvements in almost all key operating metrics—ARPU, PMCF, churn and SAC. In particular, as illustrated in Figures 5, EchoStar and DIRECTV have shown dramatic improvements over the last year in ARPU and pre-marketing cash flow margins, while keeping churn and SAC stable to down.

On the average revenue per subscriber (ARPU) front, the industry has benefited from the introduction of local channels, which are generally offered for \$4-\$6 per month, as over one-half of both DIRECTV and EchoStar's subscriber bases have added local channels since introduction in early 2000. As a result, from 1999 through today, ARPU has risen from \$49 to \$57 at DIRECTV and from \$43 to \$50 at EchoStar. As mentioned above, as a result of cable's 6%-8% annual price increases over the last several years, versus 1%-

2% average annual rate increases for DBS, we believe a substantial pricing umbrella has emerged, providing significant flexibility for DBS to enjoy price increases over the next several years.

**Pre-marketing cash flow (PMCF)** margins have risen over the last two years from the realization of significant scale economies in such areas as customer service and from the high incremental margin/flow-through effect from rising ARPU's discussed above. EchoStar PMCF margins have consistently remained above those of DIRECTV, rising from 36% in 1999 to 43% currently, while DIRECTV's have risen from 33% in 1999 to 35% most recently. (DIRECTV has actually reported higher PMCF margins of 39%-40%, although these are before accounting for customer retention and premium upgrade marketing expenses which are commonly deducted to derive PMCF by others in the industry.)

**Churn** figures have shown a dramatic turnaround from peaking in the range of 1.7%-2.0% in mid-2001 to 1.5%-1.6% most recently. Driving this reduction has been significant changes in the industry's sales and distribution models, including the elimination of unprofitable sales channels on the distribution side, the emphasis on leased equipment models and the nearly universal requirement for one-year commitments (or, if not, a substantial upfront cash investment by the customer in equipment).

After rising dramatically on a straight-line trend from 1998 levels of \$300 to roughly \$550 in 2001, **subscriber acquisition costs (SAC)** have begun to stabilize and even show signs of reversal. The industry has taken a hard-line approach to set-top manufacturers and retailers that had benefited from fiercely escalating competition between DIRECTV and EchoStar over the last several years. DIRECTV, in particular, has outlined a target of reducing SAC from peak levels of \$575 last year to \$525 this year, while at the same time generally improving consumer offers, which is due primarily to the elimination of manufacturing subsidies equaling approximately \$35 per gross addition (which will be spread between equipment vendors and retailers). EchoStar's total SAC, including capitalized equipment costs, after rising from under \$300 in 1998 to \$520 in 2001, is showing signs of leveling off this year in the \$550 range. Critically important to note is that not only are subscriber acquisition costs plateauing, but **the profile of new subscribers is of significantly increased quality**. Specifically, new additions are generally signing 12-month commitments and taking a significantly higher number of boxes—consistent with the trend mentioned above of the industry tapping more deeply into the mainstream of larger households with multiple TV's—which has proven to translate into higher ARPU and lower churn. Thus, the industry appears to be investing roughly the same dollar as it has in the last two years, but with the prospects for much greater long-term return.

### **Which Underlie an Explosion in Profitability That the Industry Is Undergoing...**

The aforementioned improvements underlie an explosion in profitability that the industry is undergoing, evidenced both by the breakout in EBITDA, spurred by significant operating leverage, and an imminent pending turn toward substantial free cash flow and earnings generation, given the inherent

fixed capital cost leverage of the business. The industry has reached a critical mass point of roughly 18 million subscribers and subscriber additions have begun to level off, triggering an explosion in operating cash flow (EBITDA) from approximately \$800 million in 2001 on an industry basis (versus a modest loss in 2000) to roughly \$1.6 billion in 2002 and \$2.7 billion in 2003, as displayed in Figure 6.

Based on average revenue per subscriber ranging from \$50 per month currently for EchoStar to \$57 per month for DIRECTV and pre-marketing cash flow margins of approximately 43% and 35%, respectively, both providers average annual pre-marketing cash flow (before subscriber acquisition costs) of approximately \$250 per subscriber. This suggests payback periods on \$550 per subscriber acquisition costs of just over two years, roughly in line with the historical phenomenon, as rising acquisition costs have been offset by rising ARPU's and pre-marketing cash flow margins. However, the reduction in monthly churn to 1.6% on an industry basis from 1.8% last year, actually implies marginal churn from subscribers added over the last year has declined even more significantly. This suggests an expansion in the average life of a subscriber from under five years on the margin a year ago to well over that time frame now. Thus, **returns on incremental invested capital have been reversed toward a rapidly rising trend, while still sustaining impressive market share gains, setting the stage for significant bottom-line profitability.**

With low upfront invested capital requirements, evidenced by EchoStar gross PP&E of \$2.5 billion currently, or \$350 per subscriber, and very modest ongoing capital requirements (primarily for capitalized SAC and new satellites to expand into new services), **the DBS industry is turning the corner on generating positive free cash flow and earnings.** EchoStar, as more of a pure play than Hughes/DIRECTV provides the most visible illustration, as the company is swinging from a loss of \$(0.45) per share in 2001 to positive earnings estimated for this year to a projected roughly \$1.00 EPS figure for 2003 (before accounting for the impact of the proposed Hughes merger transaction). Free cash flow is only slightly behind earnings generation (as capital expenditures currently exceed depreciation given the current construction of satellites), as we project EchoStar to generate positive free cash flow this year of \$65 million from a deficit of \$148 million in 2001, rising to \$350 million in 2003 (or \$0.63 per share).

### **...And Which Consolidation Stands to Significantly Leverage**

The prospects for consolidation under **the proposed merger of EchoStar and Hughes Electronics/DIRECTV would substantially leverage the aforementioned subscriber growth and profitability dynamics.**

On the subscriber growth side, with the capacity synergies envisioned under their proposed merger, EchoStar and DIRECTV have announced plans to expand local signals from the top 44 markets where currently available, or 60% of the country, to all 210 markets in the U.S., with the top 100 markets expected (equating to 85% of the country) to be launched one year following merger completion and all 210 markets within two years of close. Given the dramatic unleashing of pent-up demand in the urban/suburban markets following the launch of local signals in early 2000, highlighted by the seismic

shift in subscriber growth over the last two years toward the larger markets, as depicted in Figure 1, EchoStar has targeted the potential to expand DBS penetration in rural areas through the merger. This is particularly the case given that the low density characteristics of cable systems in these areas make the economic prospects for justifying cable rebuilds required to offer advanced digital video and high speed data services untenable, leaving these systems particularly vulnerable to DBS competition if local channels become available.

**Specifically, EchoStar has estimated that the merger transaction would result in an incremental 9.4 million DBS subscribers.** This would be reached through a combination of the higher penetrations in new local-to-local markets (based on the company's experience of realizing a 10% increase in penetration in areas where it has introduced local-to-local signals), lower churn, and a more compelling value proposition to the consumer via a widespread rollout of PVR and other interactive functionality, as well as broadband access. On the cost side of the merger benefits, potential reductions have been identified in programming costs, subscriber acquisition costs, subscriber churn and general and administrative expenses. **EchoStar management has valued these potential synergies at up to \$56 billion in total on a net present value basis** based on an expected \$5.0 billion in incremental operating cash flow (EBITDA) by 2005, which was split between \$36 billion in net present value of cost savings and \$20 billion in the net present value of revenue synergies. To be netted against this figure is an expected cost of up to \$1.5-\$2.0 billion in box replacement costs in order to move to a common platform and realize full synergies of the combined channel capacity of the two companies.

### **Valuations Appear Extremely Attractive...**

With the merger outcome expected to be resolved by the late third quarter/early fourth quarter of this year, we believe removal of the overhanging uncertainty of the transaction is likely to shift attention to the aforementioned improving fundamental picture of the DBS industry, highlighted by a focus on 2003 profitability metrics—EBITDA, EPS and FCF—which should also offer meaningful valuation metrics. In particular, for the first time in its history, is the applicability of an enterprise value to EBITDA multiple valuation methodology. This should provide greater transparency with traditional media companies, particularly the cable sector, and in our view, highlight the group's attractive valuation. Specifically, with EchoStar and Hughes/DIRECTV selling at 10-12 times 2003 EBITDA, as displayed in Figure 7, versus five-year compound annual EBITDA growth prospects of 20%-30% beyond 2002, we believe these valuation dynamics are likely to spark interest among growth and value buyers. This is particularly the case given the emergence of meaningful free cash flow and earnings next year, as **EchoStar is currently trading at approximately 25 times 2003 earnings, with forward five-year compound annual earnings growth estimated at 25%-30%.**

Corroborating the attractiveness of DBS valuations, in our view, are the implied trading multiples on the basis of enterprise value per year-end 2002 projected subscribers in the range of \$1,400-\$1,700 per subscriber, compared to cable valuations of \$3,000-\$3,500 per basic subscriber. While this



comparison can be misleading, we believe a closer analysis highlights a significant disconnect in valuations. As a short-cut form of a discounted cash flow analysis, per subscriber values are meant to take into account the future cash flow generation of a subscriber, which in the case of cable should eventually reflect significantly higher average revenues per subscriber and cash flow margins. Specifically, our estimates of average revenue per basic subscriber for the larger cable operators eventually approach \$100 per month, based on significant upselling of cable's new products, compared to our estimates for DIRECTV and EchoStar to reach ARPU's of \$60 per month by 2008. Further, longer-term cable EBITDA margins of 40%-45%, on average, should inherently exceed those of DBS, which we estimate in the 30%-40% range (given that DBS expenses the vast majority of SAC costs, which if accounted for in a similar fashion, would roughly equalize long-term margins). Thus, we estimate annual EBITDA per subscriber by 2008 of approximately \$500 for cable and \$250 for DBS. This is partially offset by significantly higher ongoing capital expenditures per cable subscriber, which we have separately modeled at \$150 versus \$10 for DBS (based on depreciated satellite replacement costs per subscriber). After fully taxing both figures, we derive unlevered free cash flow per subscriber estimates of about \$200 for cable versus \$150 for DBS. If we place a comparable terminal free cash flow multiple on these figures and discount back at a similar rate, an enterprise value per basic subscriber for both is derived. We would then adjust the DBS enterprise value per subscriber by a factor of roughly 1.5 times to account for the net present value of a near doubling expected in the DBS subscriber base from today (while applying a cable adjustment factor of 1.0 given no growth expected in basic subscribers). **This would effectively justify a premium for DBS over cable on an enterprise value per subscriber basis, as opposed to a current 50% discount,** as the higher ARPU and EBITDA generation of a cable subscriber over time would be at least offset by the capital efficiency and remaining subscriber growth opportunity for DBS.

Finally, reinforcing the attractiveness of DBS valuations, in our view, are the attractive upsides implied to our estimated target prices. In the case of EchoStar, we apply a discounted cash analysis—which uses the inputs outlined in Figures 2 and 6, including 11 times terminal EBITDA multiples and 10% discount rates—to derive a 12-month target price of \$50 per share that implies a multiple of 20 times 2003 EBITDA and \$3,000 per subscriber. Our target price for Hughes of \$36.50 per share is based on applying the proposed merger exchange ratio of 0.73 DISH shares per GMH share to our EchoStar target price.

### **And Investment Outlook Is Improving**

With evidence of steadily higher quality subscriber growth marked by reduced churn and subscriber acquisition costs and the dramatic emergence of operating cash flow profitability, to be followed by earnings and free cash flow, all of which are likely to be levered by industry rationalization through a EchoStar/Hughes Electronics merger combination, we believe the DBS stocks are poised for a substantial rebound.

In addition, the aforementioned competitive factors vis-à-vis cable have historically been a primary factor in the DBS group's stock performance, as

the market has seemed to develop a mutually exclusive view on the two industries, as displayed in Figure 8. The explosive entrance of DBS as a competitor to cable in 1994 and subsequent endorsements from investments by AT&T in DIRECTV in addition to the ASkyB (owned by News Corp./MCI) merger with EchoStar—which immediately became labeled “Death Star”—catapulted the DBS stocks while casting a long shadow over cable stocks. That trend was almost immediately reversed in June 1997, by Microsoft's investment in Comcast, which was followed by further strategic endorsements by AT&T and Paul Allen, subsequently sending the DBS stocks into a long drought. Subsequently, in late 1999/early 2000 (the last period in which we took a cautious view on the cable sector), DBS re-emerged as a stronger competitive threat through consolidation into a duopoly structure (with only DIRECTV and EchoStar remaining) and reacceleration in subscriber growth driven by the introduction of local channels in the major markets. By late 2000, coincident with cable's explosion in digital cable and cable modem subscriber additions and a slowdown in DBS subscriber additions, the stocks reversed again under typical inverse trading fashion.

Most recently, as indicated in Figure 8, **cable stocks have begun to underperform DBS, as several important trends appear to be unfolding:** recent DBS subscriber results are showing signs of improvement (increasingly at the expense of basic cable unit growth); DBS consolidation is set to occur with the proposed merger of EchoStar and Hughes/DIRECTV; and the recent EchoStar and SBC DSL bundling agreements have suggested the potential for DBS/RBOC alliances (which could address DBS's major shortcomings vis-à-vis cable in potentially adding data and telephony). Potentially further exacerbating these dynamics is the relative valuation gap between the two sectors becoming more transparent, as outlined above, as the exploding profitability of the DBS industry indicates 2003 trading multiples of 10–12 times EBITDA, at or below cable levels, despite DBS having faster EBITDA growth for the next several years, as well as meaningful free cash flow and net income next year.

**EchoStar stands out as our only Top Pick-rated stock across the entire cable and satellite universe,** offering a valuation on a stand-alone basis (without assuming the merger transaction effects) of 10–11 times 2003 EBITDA and 25 times 2003 earnings, relative to compound annual growth prospects of 20%–30% on each metric over the next five years. We also view Hughes/DIRECTV's current valuation as attractive. With reinforcing evidence of improvements in DIRECTV's operating performance following recent management changes, we view Hughes as having an improving downside case under a failed merger scenario, while offering a significant takeout premium under a successful merger with EchoStar, given a current 22% arbitrage spread discount.

Below we outline a framework of the important trends, which we define as the “4 C's”, that underlie our view of an improving DBS industry outlook.

**Figure 1 Comparison of DBS Penetration in Rural and Metropolitan Areas**

	U.S. TV Homes	1999E DBS Subs	2000E DBS Subs	2001E DBS Subs	2002E DBS Subs	Long Term Expectation	Merger Potential
Rural	33,000	6,652	7,653	8,250	8,621	12,038	20,000
• % DBS Penetration	—	20%	23%	25%	26%	36%	61%
• % of Annual Growth	—	—	30%	25%	15%	33%	56%
Metropolitan	72,000	4,794	7,128	8,920	11,024	17,962	20,000
• % DBS Penetration	—	7%	10%	12%	15%	25%	28%
• % of Annual Growth	—	—	70%	75%	85%	67%	44%
<b>Total U.S.</b>	<b>105,000</b>	<b>11,446</b>	<b>14,781</b>	<b>17,170</b>	<b>19,645</b>	<b>30,000</b>	<b>40,000</b>
• % DBS Penetration	—	11%	14%	16%	19%	29%	38%

Source: Deutsche Bank Securities Inc. estimates and company information



Figure 2 DBS Industry Subscriber Model

	1998A	2000A	2001A	2002A	2003A	2004A	2005A	2006A	2007A	2008A	2009A	2010A	2011A	2012A	2013A	2014A	2015A	2016A	2017A	2018A	2019A	2020A
End of Period Subs	702	1,403	1,440	1,461	1,486	1,510	1,519	1,400	1,413	1,434	1,480	1,480	1,515	1,564	1,608	1,646	1,680	1,680	1,680	1,680	1,680	1,708
DIRECTV NRTC - Pegasus	712	329	360	379	374	381	381	370	367	365	370	370	376	380	383	385	387	387	387	387	387	387
DIRECTV NRTC - Non-Pegasus	1,414	1,732	1,800	1,840	1,870	1,900	1,900	1,770	1,780	1,800	1,830	1,830	1,891	1,945	1,991	2,032	2,066	2,066	2,066	2,066	2,066	2,086
DIRECTV NRTC Subtotal	5,268	7,780	7,860	7,900	8,050	8,440	8,440	8,790	8,935	9,320	9,640	9,640	10,488	11,245	11,896	12,462	12,950	13,350	13,350	13,350	13,350	13,350
DIRECTV Q&O	6,862	8,521	8,488	8,544	8,520	8,348	8,348	8,348	8,348	8,348	8,348	8,348	8,348	8,348	8,348	8,348	8,348	8,348	8,348	8,348	8,348	8,348
DIRECTV Total	3,418	5,268	5,728	5,879	5,430	5,838	5,838	7,168	7,485	7,888	8,178	8,178	9,288	10,277	11,129	11,872	12,518	12,918	13,018	13,018	13,018	13,018
EchoStar	18,882	14,781	15,288	15,718	16,358	17,178	17,178	17,725	18,288	18,828	19,848	19,848	21,088	22,467	23,915	25,348	26,728	27,528	27,528	27,528	27,528	27,528
Total End of Period DBS Subs	18,882	14,781	15,288	15,718	16,358	17,178	17,178	17,725	18,288	18,828	19,848	19,848	21,088	22,467	23,915	25,348	26,728	27,528	27,528	27,528	27,528	27,528
% Change Yr. / Yr.																						
DIRECTV NRTC - Pegasus	61.3%	99.9%	79.8%	21.9%	14.0%	8.3%	8.3%	-2.8%	-3.2%	-4.1%	-3.8%	-3.8%	3.8%	3.2%	2.8%	2.4%	2.0%	2.0%	2.0%	2.0%	2.0%	1.7%
DIRECTV NRTC - Non-Pegasus	27.2%	-53.8%	-47.3%	7.2%	10.8%	15.7%	15.7%	-2.7%	-3.2%	-2.1%	-2.9%	-2.9%	1.7%	1.2%	0.8%	0.8%	0.3%	0.3%	0.3%	0.3%	0.1%	
DIRECTV NRTC Subtotal	42.1%	22.5%	21.2%	18.3%	13.3%	9.7%	9.7%	-1.7%	-3.3%	-3.7%	-3.7%	-3.7%	3.3%	2.8%	2.4%	2.0%	1.7%	1.7%	1.7%	1.7%	1.4%	
DIRECTV Q&O	52.1%	47.9%	30.7%	16.9%	9.9%	8.4%	8.4%	14.5%	15.8%	16.8%	14.2%	14.2%	8.9%	7.1%	5.8%	4.8%	3.9%	3.2%	3.2%	3.2%	3.2%	
DIRECTV Total	49.9%	42.5%	28.8%	16.9%	10.3%	8.9%	8.9%	11.9%	12.3%	12.1%	10.9%	10.9%	8.9%	6.9%	5.3%	4.4%	3.6%	3.6%	3.6%	3.6%	3.6%	
EchoStar	75.8%	54.7%	48.8%	48.8%	24.9%	29.8%	29.8%	28.3%	22.8%	21.3%	18.7%	18.7%	13.7%	10.9%	8.7%	6.7%	6.4%	6.4%	6.4%	6.4%	6.4%	
Total End of Period DBS Subs	57.7%	48.8%	38.4%	25.1%	18.8%	16.2%	16.2%	18.8%	16.9%	15.7%	14.4%	14.4%	14.4%	10.9%	8.7%	6.9%	6.4%	6.4%	6.4%	6.4%	6.4%	
Market Share																						
DIRECTV NRTC - Pegasus	7.0%	9.5%	9.5%	9.3%	9.2%	8.8%	8.8%	7.9%	7.7%	7.6%	7.4%	7.4%	7.0%	6.7%	6.4%	6.2%	6.1%	6.1%	6.1%	6.1%	6.1%	
DIRECTV NRTC - Non-Pegasus	7.1%	2.2%	2.4%	2.4%	2.3%	2.2%	2.2%	2.1%	2.0%	1.9%	1.8%	1.8%	1.7%	1.6%	1.5%	1.5%	1.4%	1.4%	1.4%	1.4%	1.4%	
DIRECTV NRTC Subtotal	14.0%	11.7%	11.8%	11.7%	11.4%	11.1%	11.1%	10.0%	9.7%	9.5%	9.3%	9.3%	8.7%	8.3%	8.0%	7.7%	7.5%	7.5%	7.5%	7.5%	7.5%	
DIRECTV Q&O	52.2%	52.7%	50.5%	49.8%	49.2%	49.2%	49.2%	49.8%	49.4%	49.3%	49.1%	49.1%	48.4%	47.9%	47.6%	47.3%	47.0%	46.9%	46.9%	46.9%	46.9%	
DIRECTV Total	64.2%	64.4%	62.4%	61.4%	60.7%	60.2%	60.2%	60.6%	60.2%	60.4%	60.4%	60.4%	59.1%	58.2%	57.6%	56.9%	56.9%	56.9%	56.9%	56.9%	56.9%	
EchoStar	33.8%	38.6%	37.8%	38.9%	38.3%	38.9%	38.9%	44.8%	46.8%	41.3%	41.8%	41.8%	42.8%	43.8%	44.8%	45.8%	46.8%	46.8%	46.8%	46.8%	46.8%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Internal Net Additions																						
DIRECTV NRTC - Pegasus	150	178	36	21	36	25	115	0	13	21	26	80	86	49	43	38	34	34	34	34	34	34
DIRECTV NRTC - Non-Pegasus	192	83	18	18	89	7	38	(8)	(3)	(1)	4	(8)	6	4	3	2	1	0	0	0	0	0
DIRECTV NRTC Subtotal	342	261	51	40	125	32	153	(8)	10	20	30	72	92	53	46	41	35	34	34	34	34	34
DIRECTV Q&O	1,261	1,803	280	120	380	360	1,182	380	245	285	320	1,200	858	747	650	587	487	418	418	418	418	418
DIRECTV Total	1,403	2,064	331	160	505	392	1,335	372	255	305	350	1,272	954	801	695	627	521	452	452	452	452	452
EchoStar	1,478	1,888	488	388	388	488	1,878	235	288	338	378	1,348	1,124	978	882	743	608	548	548	548	548	548
Total Internal Net Additions	3,878	3,952	819	548	893	880	3,213	607	543	643	728	2,620	2,078	1,779	1,540	1,381	1,160	1,000	1,000	1,000	1,000	1,000
% Change Yr. / Yr.																						
DIRECTV NRTC - Pegasus	75.0%	16.3%	71.4%	-39.4%	-28.6%	-48.8%	-36.2%	-100.0%	-38.9%	-41.2%	13.0%	-48.0%	-4.1%	-11.3%	-11.3%	-11.2%	-12.8%	-13.1%	-13.1%	-13.1%	-13.1%	
DIRECTV NRTC - Non-Pegasus	5.8%	-67.2%	-28.3%	21.3%	-133.5%	-22.2%	-47.3%	-183.9%	-119.9%	-82.8%	-42.8%	-122.4%	-176.8%	-27.8%	-30.3%	-34.8%	-42.7%	-47.3%	-47.3%	-47.3%	-47.3%	
DIRECTV NRTC Subtotal	28.3%	-30.1%	21.7%	-20.0%	-88.2%	-43.4%	-37.3%	-115.7%	-78.9%	-33.2%	0.0%	-48.9%	-17.8%	-13.0%	-12.9%	-12.8%	-14.1%	-14.8%	-14.8%	-14.8%	-14.8%	
DIRECTV Q&O	42.0%	26.3%	-20.4%	-70.1%	2.8%	-12.4%	-25.2%	21.9%	104.2%	-27.8%	-17.8%	0.7%	-28.8%	-13.0%	-12.8%	-12.8%	-14.1%	-14.8%	-14.8%	-14.8%	-14.8%	
DIRECTV Total	38.8%	14.2%	-18.8%	-44.9%	-4.9%	-28.3%	-36.8%	8.8%	86.4%	-27.8%	-18.7%	-48.8%	-28.8%	-13.0%	-12.8%	-12.8%	-14.1%	-14.8%	-14.8%	-14.8%	-14.8%	
EchoStar	83.2%	26.9%	1.1%	-21.3%	-28.9%	-19.2%	-16.1%	-27.2%	-14.3%	-4.8%	-4.3%	-14.3%	-18.8%	-13.8%	-12.8%	-12.8%	-14.1%	-14.8%	-14.8%	-14.8%	-14.8%	
Total	48.8%	18.8%	-7.8%	-43.1%	-13.8%	-19.2%	-28.8%	-18.8%	8.8%	-18.3%	-11.8%	-18.8%	-21.3%	-13.8%	-12.8%	-12.8%	-14.1%	-14.8%	-14.8%	-14.8%	-14.8%	
% of Internal Net Additions																						
DIRECTV NRTC - Pegasus	5.0%	4.8%	4.5%	4.0%	4.8%	2.8%	4.0%	0.0%	2.3%	3.3%	3.6%	2.3%	2.7%	2.8%	2.8%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	
DIRECTV NRTC - Non-Pegasus	6.2%	1.7%	1.9%	3.8%	-0.7%	0.8%	1.2%	-1.2%	-0.5%	-0.2%	0.8%	-0.3%	0.3%	0.3%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	
DIRECTV NRTC Subtotal	11.2%	6.5%	6.4%	7.8%	3.8%	3.7%	5.2%	-1.2%	1.8%	3.1%	4.4%	2.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
DIRECTV Q&O	41.0%	43.2%	36.1%	23.5%	30.2%	47.6%	40.9%	51.7%	44.1%	44.5%	44.1%	48.2%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	
DIRECTV Total	52.2%	49.8%	42.6%	31.4%	34.9%	51.2%	46.1%	56.9%	48.9%	47.7%	48.9%	48.2%	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	
EchoStar	47.8%	50.2%	57.5%	68.6%	68.8%	48.8%	53.9%	48.8%	54.1%	52.3%	51.7%	51.8%	55.8%	56.8%	56.8%	56.8%	56.8%	56.8%	56.8%	56.8%	56.8%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Gross Additions																						
DIRECTV NRTC - Pegasus	264	343	110	97	103	83	403	72	83	91	95	341	346	354	361	368	375	381	381	381	381	
DIRECTV NRTC - Non-Pegasus	342	180	44	64	10	6	123	13	17	20	25	75	82	82	83	83	84	84	84	84	84	
DIRECTV NRTC Subtotal	606	503	154	161	113	89	526	85	100	110	121	416	428	436	444	452	459	465	465	465	465	
DIRECTV Q&O	2,117	2,808	886	584	841	810	2,821	844	888	738	775	2,954	2,828	2,800	2,888	3,037	3,085	3,148	3,148	3,148	3,148	
DIRECTV Total	2,723	3,351	1,040	745	954	899	3,347	929	988	848	896	3,368	3,316	3,338	3,413	3,488	3,563	3,613	3,613	3,613	3,613	
EchoStar	1,878	2,888	888	888	888	738	2,747	818	882	713	734	2,728	2,788	2,834	2,987	3,078	3,097	3,097	3,097	3,097	3,097	
Total Gross Additions	4,601	6,239	1,928	1,633	1,842	1,638	6,094	1,747	1,870	1,561	1,630	6,096	6,104	6,172	6,400	6,565	6,660	6,710	6,710	6,710	6,710	
% Change Yr. / Yr.																						
DIRECTV NRTC - Pegasus	83.8%	29.9%	120.0%	40.7%	4.9%	-26.0%	17.5%	-34.3%	-14.8%	-11.9%	2.4%	-15.4%	1.5%	2.2%	2.1%	2.0%	1.8%	1.8%	1.8%	1.8%	1.8%	
DIRECTV NRTC - Non-Pegasus	13.9%	-83.3%	-22.0%	49.7%	-72.5%	-75.8%	-22.7%	-71.1%	-73.3%	-107.7%	289.4%	-38.9%	10.0%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	
DIRECTV NRTC Subtotal	36.5%	-17.0%	44.7%	44.1%	-15.3%	-34.5%	4.8%	-44.8%	-38.0%	-17.7%	21.3%	-21.1%	3.1%	1.8%	1.8%	1.7%	1.5%	1.5%	1.5%	1.5%	1.5%	
DIRECTV Q&O	37.7%	26.0%	8.0%	-14.7%	13.5%	3.2%	2.2%	11.4%	17.4%	-12.1%	-4.4%	1.8%	-4.8%	2.5%	2.4%	2.3%	1.9%	1.7%	1.7%	1.7%	1.7%	
DIRECTV Total	37.4%	23.4%	11.4%	-6.4%	8.1%	-3.9%	3.8%	1.1%	8.9%	-18.8%	-1.8%	-2.8%	-3.7%	2.8%	2.3%	2.2%	1.9%	1.7%	1.7%	1.7%	1.7%	
EchoStar	78.3%	36.2%	17.8%	8.2%	5.																	

## Figure 3 DBS vs. Digital Cable Offering Comparisons

[illegible]

**Source:** Deutsche Bank Securities Inc. estimates and company information

Table 4.1 DBS Versus Cable Subscriber Projections

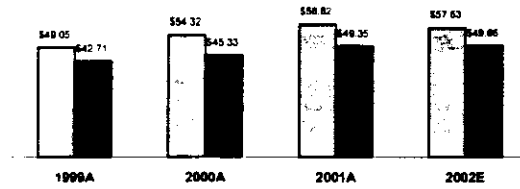
	1997A	1998A	1999A	2000A	2001A	2001A	2001A	2001A	2002E	2003E	2004E	2005E	2006E	2007E	2008E
<b>Total TV Households</b>	98,000	99,600	100,800	102,200	103,700	104,850	105,500	105,500	105,817	106,133	106,450	106,766	107,082	107,398	107,714
• % Change Year-Over-Year	1.1%	1.6%	1.2%	1.4%	1.3%	1.1%	0.6%	0.5%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
<b>Total Pay TV Subscribers</b>	71,087	74,754	78,746	83,281	83,791	85,078	86,013	86,013	86,223	87,195	87,900	88,694	89,488	90,282	91,076
• % Change Year-Over-Year	4.8%	5.2%	5.3%	5.8%	0.6%	1.5%	1.1%	0.0%	0.2%	0.9%	0.8%	0.9%	0.9%	0.9%	0.9%
• % of Total TV Households	72.5%	75.1%	78.1%	81.3%	81.3%	81.3%	81.3%	81.3%	81.3%	81.3%	81.3%	81.3%	81.3%	81.3%	81.3%
<b>Total Digital Pay TV Subscribers</b>	6,287	9,907	14,957	23,432	25,675	27,409	31,796	31,796	33,546	35,293	37,224	39,154	41,085	43,016	44,947
• % Change Year-Over-Year	48.0%	57.8%	51.0%	58.7%	8.2%	6.3%	13.8%	13.8%	5.2%	5.1%	5.4%	4.9%	4.7%	4.5%	4.3%
• % of Total Pay TV Subscribers	8.8%	13.2%	19.0%	28.1%	30.6%	32.5%	37.0%	37.0%	38.7%	40.5%	42.3%	44.4%	46.2%	48.0%	49.8%
<b>Basic Cable Subscribers</b>	64,800	66,100	67,300	68,500	68,591	68,729	68,843	68,843	68,898	69,015	69,130	69,244	69,358	69,472	69,586
• % Change Year-Over-Year	2.0%	2.0%	1.8%	1.8%	0.1%	0.2%	0.2%	0.0%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
<b>Digital Cable Subscribers</b>	—	—	—	8,651	10,475	11,667	14,826	14,826	15,821	17,013	18,304	19,709	21,114	22,519	23,924
• % Penetration of Basic Subscribers	—	—	—	12.9%	15.3%	17.0%	21.4%	21.4%	23.0%	24.7%	26.5%	28.5%	30.5%	32.5%	34.5%
<b>Digital Cable Net Additions</b>	—	—	—	2,338	1,821	1,487	1,517	1,517	1,995	1,992	1,291	1,406	1,521	1,636	1,751
• % Change Year-Over-Year	—	—	—	114.7%	115.3%	54.1%	4.2%	-20.1%	-26.3%	-18.9%	-11.8%	-7.3%	-6.2%	-5.5%	-5.2%
<b>DBS Subscribers</b>	3,301	4,456	6,982	9,521	9,460	9,640	9,920	10,340	10,560	10,815	11,120	11,470	11,820	12,170	12,520
• DIRECTV	1,002	1,157	1,806	2,521	2,460	2,540	2,620	2,700	2,760	2,840	2,920	3,000	3,080	3,160	3,240
• Net Additions	1,946	2,299	1,354	0	0	0	0	0	0	0	0	0	0	0	0
• Conversion/Acquisition/Over	346	350	942	(1,354)	0	0	0	0	0	0	0	0	0	0	0
• EchoStar	1,040	1,940	3,410	5,260	5,720	6,070	6,430	6,830	7,165	7,485	7,800	8,175	8,500	8,825	9,150
• Net Additions	880	900	1,470	1,890	460	350	360	400	335	300	335	375	415	455	495
<b>Total DBS Subscribers</b>	6,287	8,894	11,448	14,781	15,200	15,710	16,350	17,170	17,725	18,260	18,920	19,645	20,365	21,085	21,805
<b>DBS Net Additions</b>	2,838	2,487	2,752	3,335	609	510	783	820	877	555	840	725	810	895	980

(1) Results are per form for acquisition/over as reported

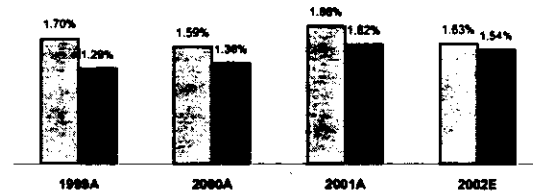
Source: Deutsche Bank Securities Inc. estimates and company information

**Figure 5: Improving DBS Operating Metrics****Average Revenue Per Subscriber**

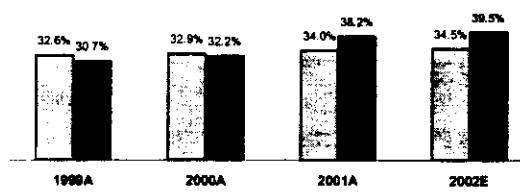
□ DIRECTV  
■ EchoStar

**Monthly Churn**

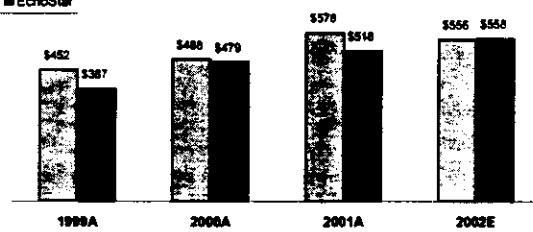
□ DIRECTV  
■ EchoStar

**Pre-Marketing Cash Flow Margin**

□ DIRECTV  
■ EchoStar

**Total Sub Acquisition Cost (SAC) Per Gross Add (Incl. Expensed/Capitalized)**

□ DIRECTV  
■ EchoStar



Source: Deutsche Bank Securities Inc. estimates and company information

Figure 6 DBS Industry Operating Model

	1998A	2008A	1081A	2081A	3081A	4081A	5081A	1083A	2083E	3083E	4083E	5083E	6083E	7083E	8083E	9083E	2007E	2008E
Revenue																		
DIRECTV NRTC - Pageaus	\$365.4	\$562.1	\$326.8	\$208.0	\$203.8	\$218.8	\$836.2	\$218.2	\$217.4	\$218.1	\$280.3	\$864.1	\$948.0	\$1,002.8	\$1,052.9	\$1,086.2	\$1,158.4	\$1,173.2
DIRECTV NRTC - Non-Pageaus	\$89.5	\$62.9	\$88.6	\$32.2	\$23.4	\$4.4	\$208.5	\$71.8	\$65.3	\$6.8	\$80.0	\$27.8	\$23.0	\$43.5	\$51.2	\$57.1	\$71.9	\$68.5
DIRECTV NRTC Subtotal	\$651.9	\$644.9	\$255.4	\$258.3	\$236.1	\$274.0	\$1,044.7	\$276.1	\$273.7	\$273.7	\$280.3	\$1,111.8	\$1,053.2	\$1,047.7	\$1,104.1	\$1,145.5	\$1,230.3	\$1,241.7
DIRECTV OAC	\$3,404.0	\$4,693.0	\$1,324.0	\$1,345.1	\$1,363.0	\$1,618.0	\$5,580.0	\$1,486.0	\$1,503.8	\$1,542.7	\$1,708.3	\$6,221.7	\$7,086.4	\$7,805.6	\$8,443.4	\$9,012.2	\$9,512.1	\$9,836.0
DIRECTV Total	\$4,023.3	\$5,495.7	\$1,886.7	\$1,866.3	\$1,600.1	\$1,778.3	\$6,644.4	\$1,728.3	\$1,763.8	\$1,802.7	\$1,883.2	\$7,278.0	\$8,230.4	\$8,850.9	\$9,662.3	\$10,289.8	\$10,461.5	\$11,308.8
EchoStar	\$1,803.7	\$2,718.2	\$81.6	\$86.3	\$1,022.5	\$1,150.4	\$4,001.1	\$1,104.5	\$1,197.6	\$1,231.7	\$1,468.1	\$4,881.1	\$5,762.5	\$6,443.7	\$7,088.6	\$7,620.0	\$8,029.3	\$8,708.7
Total Revenue	\$5,627.0	\$8,213.9	\$2,428.6	\$2,596.6	\$2,631.6	\$2,928.7	\$10,645.5	\$2,832.8	\$2,961.7	\$3,033.8	\$3,350.6	\$12,159.1	\$14,012.9	\$15,633.8	\$17,149.0	\$18,561.9	\$19,870.8	\$21,074.6
Revenue Growth																		
DIRECTV NRTC - Pageaus	34.8%	103.3%	114.7%	53.3%	28.8%	14.2%	44.0%	4.0%	5.8%	5.8%	4.9%	3.3%	7.2%	5.8%	5.0%	4.3%	3.7%	3.1%
DIRECTV NRTC - Non-Pageaus	33.5%	35.7%	-51.1%	-15.1%	7.5%	8.2%	-20.7%	-18.8%	7.8%	8.3%	6.9%	9.2%	3.3%	3.2%	3.0%	2.4%	1.8%	1.4%
DIRECTV NRTC Subtotal	59.8%	29.8%	28.4%	31.8%	24.4%	12.5%	23.9%	8.1%	6.0%	5.7%	8.2%	6.2%	8.4%	5.4%	4.6%	3.9%	3.3%	2.7%
DIRECTV OAC	112.1%	37.9%	25.0%	19.1%	18.1%	12.4%	16.3%	10.7%	11.8%	13.2%	12.6%	12.1%	14.1%	10.6%	8.2%	6.7%	5.5%	4.5%
DIRECTV Total	101.1%	38.8%	25.2%	20.9%	18.0%	12.4%	19.1%	10.3%	10.9%	12.0%	11.5%	11.2%	12.8%	9.4%	7.7%	6.4%	5.3%	4.3%
EchoStar	63.2%	69.7%	52.4%	49.5%	48.5%	42.6%	47.4%	28.1%	18.9%	20.0%	18.8%	21.5%	19.2%	14.7%	12.4%	10.7%	9.3%	8.2%
Total Revenue Growth	58.8%	45.8%	34.0%	30.4%	28.4%	22.7%	28.4%	16.6%	14.3%	15.3%	14.4%	15.1%	16.7%	11.8%	8.7%	8.2%	7.1%	6.1%
Average Revenue per Subscriber																		
DIRECTV NRTC - Pageaus	\$43.94	\$64.80	\$48.48	\$47.80	\$46.76	\$48.90	\$47.86	\$61.96	\$61.50	\$61.07	\$63.05	\$61.80	\$63.08	\$64.27	\$66.32	\$68.26	\$70.04	\$71.70
DIRECTV NRTC - Non-Pageaus	\$3.92	\$3.72	\$4.78	\$4.10	\$4.26	\$4.09	\$4.35	\$1.45	\$1.00	\$0.87	\$2.96	\$1.39	\$2.80	\$3.77	\$4.82	\$5.75	\$6.54	\$5.70
DIRECTV NRTC Subtotal	\$43.70	\$64.46	\$48.38	\$47.50	\$46.86	\$48.49	\$47.75	\$1.94	\$1.40	\$1.07	\$2.88	\$1.79	\$2.80	\$3.47	\$6.22	\$6.15	\$6.90	\$7.80
DIRECTV OAC	\$9.26	\$4.36	\$6.50	\$6.00	\$7.30	\$6.31	\$8.52	\$6.70	\$6.52	\$6.31	\$8.40	\$7.73	\$8.73	\$9.80	\$8.01	\$1.86	\$2.88	\$2.85
DIRECTV Total	\$47.52	\$52.14	\$56.13	\$56.56	\$54.84	\$58.51	\$64.29	\$58.43	\$58.24	\$56.82	\$68.77	\$66.18	\$74.42	\$68.88	\$69.00	\$68.46	\$71.23	\$74.62
EchoStar	\$21.41	\$48.33	\$4.23	\$20.33	\$9.40	\$9.48	\$46.35	\$8.46	\$6.40	\$6.85	\$11.87	\$46.85	\$11.84	\$5.45	\$6.32	\$7.26	\$9.28	\$11.34
Total Average Revenue per Sub	\$46.36	\$54.69	\$53.20	\$53.44	\$52.71	\$58.01	\$53.62	\$52.92	\$52.50	\$52.89	\$58.82	\$58.49	\$54.96	\$56.95	\$57.71	\$58.04	\$60.34	\$61.60
Pre-Marketing Cash Flow																		
DIRECTV NRTC - Pageaus	\$85.2	\$174.9	\$96.6	\$57.3	\$58.1	\$83.0	\$237.1	\$83.4	\$83.8	\$84.0	\$87.2	\$268.4	\$286.4	\$318.9	\$343.0	\$349.4	\$382.1	\$388.9
DIRECTV NRTC - Non-Pageaus	71.8	82.1	13.4	13.1	13.6	14.3	94.8	15.7	15.4	15.2	15.8	82.0	68.6	72.7	76.6	79.7	82.7	84.9
DIRECTV NRTC Subtotal	157.1	257.0	73.0	70.8	71.7	78.3	291.9	79.0	79.3	79.2	83.0	320.5	344.0	391.6	419.6	422.1	464.8	483.5
DIRECTV OAC	1,108.4	1,548.8	433.1	477.0	479.5	570.9	1,888.6	481.7	522.5	540.8	681.6	2,146.7	2,541.1	2,890.4	3,181.3	3,570.5	3,888.7	4,140.3
DIRECTV Total	1,265.5	1,763.8	506.1	547.8	551.2	573.3	2,178.5	578.8	601.7	620.0	678.7	2,467.2	2,905.1	3,282.0	3,600.9	4,012.7	4,321.3	4,624.0
EchoStar	482.1	873.9	342.4	374.4	408.2	453.8	1,538.8	434.5	465.7	483.9	578.2	1,821.1	2,408.8	2,878.7	3,363.0	3,813.6	4,280.6	4,680.5
Total Pre-Marketing Cash Flow	\$1,757.6	\$2,637.7	\$848.5	\$922.2	\$959.4	\$1,027.5	\$3,707.3	\$1,000.1	\$1,057.4	\$1,114.0	\$1,251.6	\$4,288.3	\$5,310.9	\$6,160.7	\$7,012.9	\$7,826.3	\$8,582.1	\$9,323.5
Pre-Marketing Cash Flow Margin																		
DIRECTV NRTC - Pageaus	29.8%	30.0%	29.0%	27.8%	28.1%	28.3%	28.3%	29.0%	29.4%	29.3%	28.2%	29.2%	31.2%	31.8%	32.3%	33.0%	33.8%	34.0%
DIRECTV NRTC - Non-Pageaus	19.7%	24.0%	27.0%	26.8%	26.1%	26.3%	26.3%	27.0%	27.4%	27.2%	27.2%	27.2%	29.2%	29.8%	30.5%	31.0%	31.6%	32.0%
DIRECTV NRTC Subtotal	24.1%	26.2%	28.0%	27.4%	27.7%	27.6%	27.6%	28.0%	29.0%	28.5%	28.2%	28.8%	30.3%	31.4%	32.1%	32.6%	33.2%	33.5%
DIRECTV OAC	32.1%	32.6%	32.0%	31.8%	32.3%	32.3%	32.3%	33.3%	34.1%	34.1%	34.9%	34.9%	36.3%	37.2%	38.4%	39.4%	40.8%	41.1%
DIRECTV Total	31.5%	32.3%	32.3%	34.4%	34.3%	32.2%	33.3%	33.0%	34.1%	34.4%	34.9%	35.9%	36.9%	36.6%	37.6%	38.9%	40.0%	40.9%
EchoStar	30.7%	32.2%	38.7%	38.7%	39.8%	36.2%	38.2%	38.3%	39.4%	40.1%	38.3%	39.5%	41.5%	43.5%	44.9%	45.2%	47.2%	48.1%
Total Pre-Marketing Cash Flow Margin	31.2%	32.4%	34.9%	36.1%	36.3%	33.4%	35.1%	33.5%	36.2%	36.7%	36.2%	36.1%	37.8%	38.9%	40.8%	42.2%	43.2%	44.2%
Expansion SAC / Gross Addition																		
DIRECTV NRTC - Pageaus	\$446	\$496	\$481	\$461	\$310	\$150	\$380	\$186	\$183	\$179	\$186	\$179	\$166	\$187	\$160	\$183	\$186	\$188
DIRECTV NRTC - Non-Pageaus	448	487	519	511	408	404	801	428	470	475	475	470	476	485	463	480	487	458
DIRECTV NRTC Subtotal	894	983	1,000	972	718	714	1,181	574	628	628	628	628	628	628	628	628	628	628
DIRECTV OAC	452	488	499	488	543	542	578	543	530	542	543	543	543	543	543	543	543	543
DIRECTV Total	451	488	548	543	542	542	542	543	543	543	543	543	543	543	543	543	543	543
EchoStar	387	453	437	387	384	382	385	436	438	428	431	430	414	404	386	382	386	380
Expansion SAC / Gross Addition	\$425	\$474	\$488	\$523	\$487	\$437	\$479	\$476	\$482	\$480	\$484	\$475	\$465	\$489	\$388	\$381	\$377	\$373
Capitalized SAC / Gross Addition																		
DIRECTV NRTC - Pageaus	\$0	\$0	\$28	\$50	\$86	\$248	\$102	\$280	\$287	\$286	\$10	\$290	\$314	\$308	\$303	\$288	\$282	\$287
DIRECTV NRTC - Non-Pageaus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIRECTV NRTC Subtotal	0	0	20	31	90	233	78	221	238	243	245	238	234	250	246	243	239	235
DIRECTV OAC	0	0	0	0	6	6	2	6	6	12	12	10	34	122	153	187	189	159
DIRECTV Total	0	0	4	7	16	31	19	28	36	42	43	36	80	138	165	166	170	150
EchoStar	0	26	81	132	156	111	123	124	120	151	123	125	140	136	152	128	124	120
Capitalized SAC / Gross Addition	\$0	\$11	\$43	\$86	\$76	\$86	\$83	\$84	\$78	\$83	\$77	\$77	\$108	\$137	\$150	\$180	\$148	\$146
Total SAC / Gross Addition																		
DIRECTV NRTC - Pageaus	\$446	\$496	\$319	\$311	\$408	\$404	\$462	\$455	\$470	\$475	\$475	\$470	\$470	\$486	\$463	\$480	\$487	\$455
DIRECTV NRTC - Non-Pageaus	448	486	519	511	406	404	802	435	470	475	475	470	470	486	463	480	487	458
DIRECTV NRTC Subtotal	894	982	838	822	814	808	1,264	890	940	950	950	940	940	972	926	960	975	913
DIRECTV OAC	452	488	499	488	543	542	578	543	530	542	543	543	543	543	543	543	543	543
DIRECTV Total	451	488	561	543	536	527	560	543	530	542	543	543	543	543	543	543	543	543
EchoStar	387	478	528	518	384	374	388	436	438	428	431	430	414	404	386	382	386	380
Total SAC / Gross Addition	\$425	\$485	\$541	\$528	\$543	\$503	\$541	\$544	\$548	\$551	\$543	\$531	\$582	\$648	\$638	\$631	\$636	\$621
EBITDA																		
DIRECTV NRTC - Pageaus	(\$32.8)	\$4.9	\$5.6	\$12.6	\$26.2	\$47.6	\$82.0	\$48.3	\$48.7	\$47.8	\$51.4	\$197.2	\$241.4	\$263.9	\$264.2	\$302.5	\$320.8	\$334.4
DIRECTV NRTC - Non-Pageaus	(113.0)	(76.3)	(79.5)	(78.0)	9.8	11.7	(7.0)	8.9	7.4	5.8	3.8	28.9	30.0	34.3	38.2	41.4	44.8	46.1
DIRECTV NRTC Subtotal	(245.8)	(71.4)	(15.9)	(65.3)	36.0	59.3	75.0	57.2	56.2	53.6	55.2	226.1	271.4	298.2	302.4	344.0	364.7	380.7
DIRECTV OAC	181.0	132.0	56.0	78.0	20.0	63.0	260.0	38.0	122.0	139.0	180.0	512.0	1,088.0	1,016.0	1,201.0	1,214.0	1,281.0	1,308.0
DIRECTV Total	34.2	140.6	40.5	63.3	56.0	122.3	263.0	144.1	178.1	192.1	233.3	713.3	1,369.4	1,317.0	1,502.0	1,528.0	1,724.0	1,716.0
EchoStar	(172.0)	(187.2)	-51.1	133.8	136.2	171.1	51.1	178.5	178.2	180.4	201.4	801.4	1,331.9	1,088.7	1,227.1	1,281.3	1,308.2	1,336.4
Total EBITDA	(\$134.8)	(\$46.6)	\$89.2	\$207.3	\$271.2	\$293.4	\$804.1	\$322.6	\$356.8	\$382.9	\$479.4	\$1,882.7	\$2,682.7	\$2,405.6	\$2,729.1	\$2,836.3	\$2,811.9	\$2,852.6
EBITDA Margin																		
DIRECTV NRTC - Pageaus	-11.4%	0.8%	2.7%	6.1%	12.7%	21.7%	11.0%	22.6%	22.4%	21.9%	22.3%	22.9%	25.9%					

Source: Deutsche Bank Securities Inc. estimates and company information





Figure 7 DBS Industry Valuation Comparison

	DIRECTV (GMH)			EchoStar (DISH)			Cable Composite (5)		
	2002E	2003E	2004E	2002E	2003E	2004E	2002E	2003E	2004E
Closing Price on: 5/7/02	\$14.35	\$14.35	\$14.35	\$25.50	\$25.50	\$25.50	-----	-----	-----
Fully Diluted Shares (1)	1,411.5	1,411.5	1,411.5	601.8	601.8	601.8	-----	-----	-----
Market Capitalization	\$20,255.4	\$20,255.4	\$20,255.4	\$15,345.0	\$15,345.0	\$15,345.0	-----	-----	-----
Plus: Long-Term Debt and Preferred	\$3,795.3	\$4,037.5	\$4,030.6	\$3,706.5	\$3,704.5	\$3,703.8	-----	-----	-----
Less: Cash and Cash Equivalents	(200.0)	(200.0)	(253.0)	(4,463.0)	(4,809.4)	(5,643.1)	-----	-----	-----
Less: Non-DBS Consolidated Debt, Net	(3,255.3)	(3,369.5)	(3,439.5)	0.0	0.0	0.0	-----	-----	-----
Less: Option/Warrant Proceeds (1)	(372.4)	(372.4)	(372.4)	(137.5)	(137.5)	(137.5)	-----	-----	-----
Less: Other Assets (at 90% of PMV)	(5,960.7)	(6,659.0)	(7,269.7)	(40.4)	(43.3)	(46.3)	-----	-----	-----
<b>DBS Enterprise Value</b>	<b>\$14,262.5</b>	<b>\$13,692.0</b>	<b>\$12,951.4</b>	<b>\$14,410.5</b>	<b>\$14,059.3</b>	<b>\$13,221.8</b>	-----	-----	-----
Year-End DBS Subscribers (2)	9,640	10,498	11,245	8,175	9,299	10,277	-----	-----	-----
<b>Enterprise Value Per Subscriber</b>	<b>\$1,480</b>	<b>\$1,304</b>	<b>\$1,152</b>	<b>\$1,763</b>	<b>\$1,512</b>	<b>\$1,287</b>	<b>\$3,110</b>	-----	-----
DBS Operating Cash Flow (EBITDA) (3)	\$527.2	\$1,089.4	\$1,618.0	\$801.4	\$1,321.9	\$1,769.7	-----	-----	-----
• EBITDA Margin	8.5%	15.4%	20.7%	16.5%	22.8%	26.6%	-----	-----	-----
<b>EBITDA Multiple</b>	<b>27.1X</b>	<b>12.6X</b>	<b>8.0X</b>	<b>18.0X</b>	<b>10.6X</b>	<b>7.5X</b>	<b>11.9X</b>	<b>10.8X</b>	<b>9.6X</b>
Total Company Free Cash Flow	(\$1,635.0)	(\$442.2)	\$53.0	\$64.1	\$346.4	\$834.4	-----	-----	-----
<b>Free Cash Flow Multiple</b>	-----	-----	-----	-----	<b>44.0X</b>	<b>18.4X</b>	-----	-----	-----
Earnings per Share	(\$0.31)	\$0.04	\$0.32	\$0.07	\$1.00	\$1.76	-----	-----	-----
<b>P/E Multiple</b>	-----	-----	<b>44.9X</b>	-----	<b>25.4X</b>	<b>14.5X</b>	-----	-----	-----
<b>Valuation Assumptions</b>									
Terminal Year	-----	2008	-----	-----	2008	-----	-----	-----	-----
Terminal Multiple	-----	11.0x	-----	-----	11.0x	-----	-----	-----	-----
Discount Rate	-----	10.0%	-----	-----	10.0%	-----	-----	-----	-----
Private Market Value Per Share	\$21.29	\$22.60	-----	\$46.90	\$51.16	-----	-----	-----	-----
Target Discount to PMV	0.0%	0.0%	-----	10.0%	10.0%	-----	-----	-----	-----
<b>Target Price Per Share (4)</b>	<b>\$30.81</b>	<b>\$33.61</b>	-----	<b>\$42.21</b>	<b>\$46.04</b>	-----	-----	-----	-----
• Implied Enterprise Value Per Subscriber	\$3,890	\$3,894	-----	\$2,993	\$2,841	-----	-----	-----	-----
• Implied EBITDA Multiple	71.1X	37.5X	-----	30.5X	20.0X	-----	-----	-----	-----
Closing Price on: 5/7/02	\$14.35	\$14.35	-----	\$25.50	\$25.50	-----	-----	-----	-----
Target Price vs. Current Price	114.7%	134.2%	-----	65.5%	80.6%	-----	-----	-----	-----

(1) Fully Diluted Shares and Option/Warrant Proceeds include only in-the-money options and warrants

(2) DIRECTV Subscribers exclude NRTC franchisee subscribers

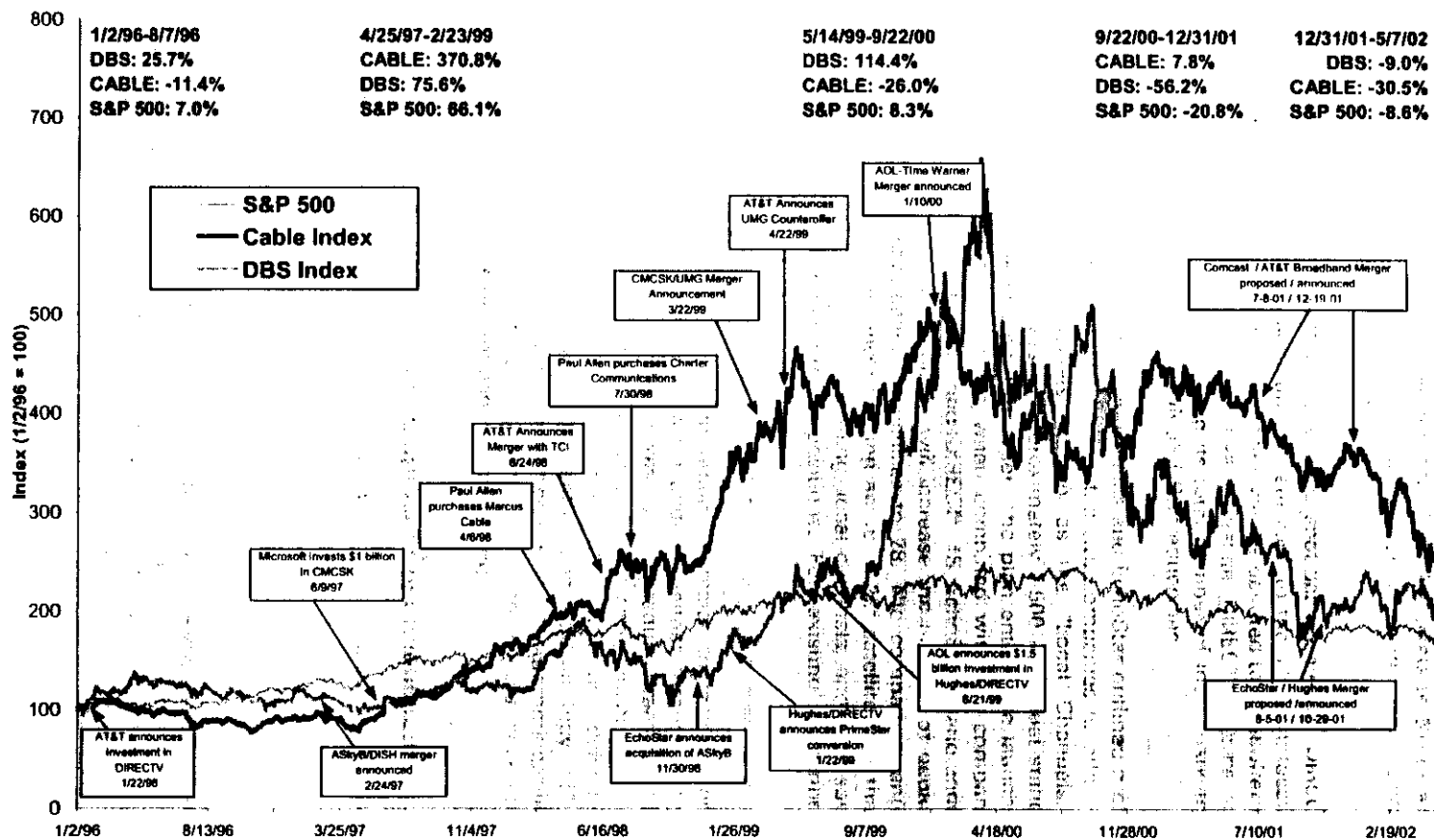
(3) DIRECTV EBITDA for U.S. DIRECTV operations only

(4) GMH Target price based on 0.73 EchoStar exchange ratio

(5) Average Cable Enterprise Value Per Subscriber and Cable EBITDA multiples include COX, CHTR, CVC, ADLAE, MCCC and ICCI and are weighted by Cable Enterprise Value

Source: Deutsche Bank Securities Inc. estimates and company information

Figure 8 DBS Sector Stock Performance vs. Cable



Source: FactSet. Shaded areas highlight inverse movements in Cable and DBS indexes. Market Cap Weighted DBS Index includes DISH, GMH, PGTV and USSB. (1/2/96 = 100)  
 Market Cap Weighted Cable Index includes ADLAC, CHTR, CLSC, CMCSK, COX, CTYA, CVC, ICCI, JOINA, MCCC, TCAT, TCOMA, AND UMG. (1/2/96 = 100)

Source: Deutsche Bank Securities Inc. estimates and company information

## I. Customer Growth

While the dramatic uprising of cable over the last two years—resulting in 15 million digital cable subscribers with availability to 80% of the U.S. and 7 million cable modem subscribers with availability to 70% of the country—was expected to significantly narrow DBS's window of opportunity in urban/suburban markets, the level of DBS growth in these markets has not abated (as gross additions in the top 40-45 markets has generally grown faster than overall growth). As a result, we expect DBS industry net additions of 2.6 million in 2002, down only modestly from last year's 2.9 million net additions, to finish this year with nearly 20 million industry subscribers. In our view, this continued trend has been driven by a dramatic transformation of the DBS product offering vis-à-vis cable over the last two years in essentially three respects: local channel availability, multi-room equipment cost reduction and a more favorable monthly price-value comparison.

### Local Channels

#### Background

*The majority of recent DBS growth has been derived from the top 36-41 markets*

Since the DBS industry's introduction of local channels beginning in early 2000 into the top 36-41 markets of the country, which represent 60% of U.S. homes, the majority of DBS growth has been derived from these markets. This includes approximately 70% of DIRECTV's subscriber additions coming from 41 of the top DMA markets where it offers local and an estimated 60% of EchoStar's growth derived from 36 of the top markets where it makes local available.

Over the last five years, DIRECTV and EchoStar have accumulated all the high-power DBS frequencies licensed for full CONUS coverage of the United States through the acquisitions of PrimeStar and ASkyB, respectively. This includes a total of 96 frequencies (translating into approximately 1,000 digital video broadcast channels based on current average compression rates), spread evenly across three orbital locations—101° WL, 110° WL and 119° WL—of which 50 are owned by EchoStar and 46 by DIRECTV. With satellite launches by each company in September 1999, DIRECTV and EchoStar expanded their historical channel capacities of about 150-200 channels each to 500 channels each, enabling them to offer local signals in top markets and additional programming services.

**The number of channels offered is expected to be further increased under a successful EchoStar/Hughes merger scenario.** With the deployment of interoperable equipment, the two companies propose to significantly increase the number of programming channels offered, particularly local channels, through the elimination of more than 500 duplicative channels, as shown in Figure 9.

**Figure 9 DIRECTV / EchoStar Channel Duplication**

	<b>DIRECTV Channels</b>	<b>EchoStar Channels</b>	<b>Channels Duplicated</b>
Basic (1)	116	122	99
Premium	31	34	28
Local (2)	~450	~400	~300
Other:			
PPV	50	24	24
Sports (3)	23	23	22
A la carte (4)	49	64	30
<b>Total</b>	<b>~719</b>	<b>~667</b>	<b>~503</b>

(1) Total Choice for DIRECTV, America's Top 100 for EchoStar  
(2) DIRECTV expects to also broadcast local channels to ten new markets in 2002 from the 119° WL orbital location  
(3) Does not include professional and college sports packages  
(4) Includes Spanish-language channels, Adult, Family Pack and additional content in America's Top 150

Source: Deutsche Bank Securities Inc. estimates and company information

As mentioned above, local channels became available over satellite for the first time in early 2000, following passage of the Satellite Home Viewer Improvement Act (SHVIA) in 1999, which provided the industry with a compulsory license to offer local signals, and industry consolidation in 1999 in the form of EchoStar's acquisition of ASkyB and DIRECTV's acquisition of PrimeStar, which essentially doubled the capacity of both satellite providers to roughly 500 channels. This eliminated the need for consumers in the top 36-41 markets to either keep the basic broadcast tier of cable or obtain an over-the-air antenna in order to receive local signals with DBS service.

*The majority of new DBS subscribers are increasingly former cable subscribers*

This availability of local channels in 2000 unleashed significant pent-up demand for DBS service in the urban/suburban markets that continues today as sales of local programming channels remains exceptionally strong and continues to be a major driver of subscriber additions in the urban/suburban markets. DIRECTV and EchoStar currently offer local programming in 41 markets and 36 markets, respectively, representing 60%-65% of total U.S. households. Figures 10 and 11 provide a full accounting of the top 100 DMA (Designated Market Area), including the competition from major cable operators. Given cable penetration in urban areas of 60%-70% and DBS penetration in these areas of 10%-15%, the majority of new DBS subscribers are increasingly former cable subscribers.







## Must-Carry Rules

*Upon a successful consummation of a DIRECTV / EchoStar merger, the must-carry issue will become moot*

Under must-carry requirements of SHVIA, which became effective beginning on January 1, 2002, DBS providers were required to carry all local signals in a market where any local signals are offered. While the DBS industry had appealed the must-carry rules on multiple fronts, including the request of the FCC to reconsider its rules and by requesting federal courts of appeals to dismiss must-carry on constitutional grounds, they have all proved to be unsuccessful. EchoStar, however, has made one last effort, appealing to the Supreme Court, arguing that under first amendment rights that subscribers should be able to view whatever channels they want. Upon a successful consummation of a DIRECTV / EchoStar merger, however, the issue would become moot, as the two companies have announced that they would offer all local signals to all 210 local markets within two years of the merger close.

Given that the estimated 344 local channels available across the top 20 markets alone presented capacity issues, both DIRECTV and EchoStar have launched spot-beam satellites to make more efficient use of channel capacity through "frequency reuse", in order to comply with the must-carry requirements. With the successful launch of these satellites, DIRECTV and EchoStar are able to distribute all stations in the markets in which local is already offered.

EchoStar currently offers "must-carry" local service in all of its 36 markets, representing 56% of the U.S. population through satellites located at 110° WL, 119° WL, as well as "wing" satellites located at 61.5° WL and 148° WL. The company recently launched its first spot beam satellite, EchoStar 7, and that satellite is currently being tested before moving to its final position at the 119° WL location. In addition, EchoStar 8 is now under construction and is expected to be launched later this year into the 110° WL position. Using both of these spot beams satellites as well as existing satellites, EchoStar will be able to provide local signals in 50 DMAs using 10 of its 50 licensed full-CONUS DBS frequencies.

As EchoStar 7 was delayed due to technical issues discovered at the manufacturing facility, the company was forced to fulfill the compulsory obligations to offer all local channels in its local markets through its "wing" satellites. Customers wishing to receive all local signals need to get a second satellite dish, which EchoStar is providing free-of-charge, which can look at one of these satellites. The FCC staff recently issued an opinion that EchoStar was in violation of SHVIA in its implementation of must carry, but offered several possible remedies, most of which appear relatively benign. Regardless, the company's wing satellite solution is a temporary one, and is likely to be replaced with a single dish solution once EchoStar 7 is moved into place in early May.

DIRECTV currently offers "must-carry" local service in 41 markets, representing 62% of the U.S. population, through its recently launched DIRECTV 4S satellite located at 101° WL via six dedicated frequencies. DIRECTV 4S is a high-powered spot-beam satellite that added enough capacity to broadcast an additional 225 new local channels when the satellite became operational at the end of 2001. By the end of this year, the company

expects to allocate several additional frequencies at the 119° WL location, increasing the number of local markets to 51, or an increase of 10 markets (note that DIRECTV subscribers using the 119° WL satellite are required to use a larger, elliptical dish).

The company's second spot-beam satellite, DIRECTV 7S, is scheduled to launch sometime in late 2003 to the 119° WL location with the expectation that three frequencies will be devoted to local offerings. With the addition of the second spot beam satellite, DIRECTV will be able add an additional 29 markets, bringing its total number of local markets to 70, using 9 of its 46 licensed full CONUS DBS frequencies.

On February 25, Hughes and EchoStar outlined a plan under their proposed merger that will lead the two companies to offer local channels in all 210 DMA markets (known as the "Local Channels, All Americans" plan), encompassing approximately 1,500 individual stations within 24 months of the closing its merger. The plan entails the launching of a new spot-beam satellite, which when combined with the companies spot-beam satellites already launched (DIRECTV 4S, EchoStar 7) and under construction (DIRECTV 7S, EchoStar 8), will increase the number of dedicated local programming spot-beam frequencies to 28. The companies' engineers have designed a system incorporating an 18" x 22" satellite dish that will be able to receive regular programming, local channels, and high speed Internet access from multiple orbital positions. For existing subscribers that need the new equipment to receive local channels, the companies have indicated that it will be provided free of charge.

While this would require a major transition process given the different technical hardware standards—either through a forced conversion of one side's set-top boxes or a gradual transition by taking down niche programming on either side and forcing box replacements—it would ultimately realize the greatest utility of the 1,000-channel combined platform. The companies currently estimate that they will use additional channel capacity to offer additional HDTV programming, video on demand services, and other programming including pay-per-view, educational, specialty, and foreign language programming.

### **Multi-Room Equipment Cost Reductions**

***DIRECTV and EchoStar have substantially reduced the cost for new customers to wire multiple TV's within a home***

DBS equipment costs at retail were slashed several years ago and promoted with aggressive free equipment and installation offers. However, consumers were hit with a "sticker-shock" effect upon finding that the cost of second set receivers to wire additional TV's, along with installation costs for more than one set, resulted in over \$500 in upfront costs for the average household with 2-3 television sets. However, over the last year, DIRECTV and EchoStar have substantially reduced the cost for new customers to wire multiple TV's within a home, as DIRECTV now offers two boxes with installation for \$0-\$49 and EchoStar has successfully introduced an equipment rental for up to four boxes on one dish (both DIRECTV and EchoStar require 12 month commitments under their respective offers) along with a discounted two box purchase offer similar to DIRECTV's.





## Equipment Rental Plans

*The leasing program significantly reduces future acquisition costs since the equipment can be refurbished and redeployed*

EchoStar introduced a leasing program in 2000 which is now called the "Digital Home Plan," which entails a required one-year commitment to programming packages costing at least \$32 per month, a background credit check and a credit card, the combination of which effectively minimizes subscriber churn. The equipment is owned by EchoStar and is reclaimed in the case of a disconnected subscriber (or the subscriber's credit card will be charged the full price of the equipment), which significantly reduces future acquisition costs since the equipment can be refurbished and redeployed for less than \$100 to the next new subscriber.

This practice is imbedded in the cable model, which drives cable's historically lower upfront cost advantage versus DBS. Under the DBS lease program, the upfront costs are practically eliminated in return for a \$5 per set-top box lease fee every month. To date, EchoStar has experienced tremendous success, with 30%-40% of its activations signing up under the lease program, on average, and paying a lease fee of \$5 per month per receiver with much higher second set penetrations, resulting in a much higher return on investment than the consumer equipment purchase model. DIRECTV also offers a lease program, but only through its direct sales channel, which is not heavily promoted and accounts for only 1% of the company's gross additions.

The lease program necessitates a shift to capitalizing equipment costs, rather than expensing the subsidies, since ownership of the equipment resides with the company rather than the customer (which is a practice that is customary with cable). This significantly lowers expensed subscriber acquisition costs on the income statement, which when added to capitalized lease equipment, results in a gross subscriber acquisition figure. The one risk to the lease model is an eventually higher churn rate, following the one-year commitment, which is inherent in cable's higher basic churn of 2.5%-3% per month. However, as mentioned above, since the DBS companies continue to own the equipment, it can be redeployed at low cost. Illustrative of this is EchoStar, which in the first quarter of this year reported \$12 million of returned cash and hardware, which the company will use to offset future subscriber acquisition costs.

## Monthly Pricing

*DBS prices are more competitive than cable rates*

In the larger urban/suburban markets, basic cable rate increases that have followed plant upgrade completions have been as high as 8%-10% annually, while DBS prices have largely remained static. As shown in Figure 3, showing a cross-section of cable prices across the larger U.S. markets, basic cable prices, which include 60-70 analog cable channels, have risen to an average of \$40 per month. This is actually at the level of the most popular DBS packages of DIRECTV and EchoStar, which include closer to 160-170 channels of all-digital video service, 30-35 CD-quality audio channels and an interactive program guide. To equal DBS' product offering with the addition of digital cable, the additional \$10 digital access fee raises cable's pricing to \$50 versus \$40 for DBS.

To be more specific, DIRECTV's Total Choice package of 110 channels with local channels, which includes the best of cable for \$37.99 month is equal to

or below the price of expanded basic in many cable systems. EchoStar's America's Top 100 package with local channels is similar at \$37.98. These rates compare to the average basic analog cable rate of \$40 per month, which generally increases by \$7-\$10 per month for digital cable, and is roughly comparable to DBS in terms of channel availability (DIRECTV also has the only meaningful programming access advantage, with the exclusive rights to the NFL Season Ticket package through 2002).

While this raises the price of cable's digital product offering above that of DBS, digital cable does not require upfront equipment costs as DBS still generally does. However, a combination of lower equipment costs and promotional offers that trade-off low upfront fees for 12-month programming commitments has essentially reduced the consumer upfront fees to zero, including professional installation, for a single television set household and as low as \$0-\$50 for a two television set household. For those choosing a leasing program, which often attracts three and four television set households, equipment costs are \$5 per month per television set, which is slightly higher than cable equipment rental charges (which are not included in the aforementioned cable rates).

The combination of these changes in the DBS offering have significantly shifted the price-value comparison between cable and satellite across a majority of the country in DBS' favor, in our view. Specifically, for the average household with multiple TV's in an urban/suburban market, the addition of local channels and reduction in equipment prices have eliminated historical disadvantages of DBS versus cable, while the pricing model differences have provided a strong incentive for consumers to switch from cable to satellite.

### EchoStar Packages

Specifically, EchoStar's current programming packages are as follows with local channels an additional \$5.99 per month:

- 1) AT50 – \$22.99 for 77 video channels,
- 2) AT100 – \$31.99 for 106 video channels and 33 audio,
- 3) AT150 – \$40.99 for 137 video channels and 49 CD-quality audio channels,
- 4) America's Everything Pack – \$72.99 for AT150 plus four premium multiplex packages.

EchoStar typically has in effect a number of promotional offerings, the most recent of which include:

- 1) Free Dish – A free satellite system and free installation for subscribers committing to 12-months of service.
- 2) 1-2-3 Great TV – A free second receiver and three months of free programming (including local channels) and free installation for subscribers choosing to purchase a system for \$149 and committing to 12-months of service.



- 3) Digital Home Plan – A \$49.99 activation fee for up to four receivers, free delivery, free installation, and three months of free programming (including local channels). For an additional \$99, subscribers can choose to upgrade to a DishPVR system. Lease fees are \$5 per receiver. The Digital Home Plan is subject to a credit approval and a 12-month commitment. A cancellation fee of \$240 applies to those leaving before 12 months of service.

### DIRECTV Packages

DIRECTV recently overhauled its programming packages to more closely match cable and now offers three separate packages as follows:

- 1) Total Choice – 79 video channels and 31 CD-quality audio channels for \$31.99 per month without local channels and \$37.99 per month with local.
- 2) Total Choice Plus – 89 video channels and 36 audio channels for \$35.99 per month without local channels and \$39.99 with local.
- 3) Total Choice Premier – 144 video channels and 36 audio channels for \$81.99 per month without local channels and \$85.99 per month with local.

Equipment and installation fees for DIRECTV are generally \$49 for one system and \$99 for two systems. DIRECTV dealers have been buying these down by \$50 in both cases, so an all-in system can be had for essentially zero upfront costs, provided the customer makes a 12-month commitment.

### Other Competitive Advantages

#### Retail Distribution

*We expect the DBS industry to continue its lead in offering newer services*

DBS also holds an advantage in having retail distribution capabilities, allowing higher-end boxes, such as personal video recorders, to be largely financed by consumers, as discussed in detail below. To the extent that cable requires higher-end advanced digital set-top boxes, the incremental costs are absorbed by the cable operator under its current business model and recouped from the subscriber over time (which along with the lack of visible revenue streams, explains in our view the slow deployments by cable operators of advanced set-tops). Thus, with a more favorable fixed and variable capital cost equation and instant scalability advantage, we expect the DBS industry to continue its lead in offering newer services.

*EchoStar and DIRECTV will be introducing a standardized platform*

As part of its merger, EchoStar and DIRECTV will be introducing a standardized platform, which when complete will allow the two companies to fully capitalize on the consolidation of their combined spectrum. EchoStar has also developed a single receiver, code named DYDRA that can be configured to receive either EchoStar or DIRECTV programming. This set-top box which should be commercially available soon, is designed to provide a low cost set-top box that can be deployed prior to a merger with Hughes Electronics. Once the two companies obtain regulatory approval and decide on the standard platform, it will not be necessary to replace the DYDRA boxes already in the

field. The companies estimate that the all-in costs of replacing equipment in the field will be \$1.5-\$2.0 billion, which includes the cost of the set-top, the antenna (satellite dish) and the truck roll.

### Niche Targeting

*Satellite has better addressed niche audiences*

To date, satellite has better addressed niche audiences, through a combination of foreign language programming and cutting edge technology including personal video recording functionality and HDTV (both described in more detail below). Both DBS providers offer an array of foreign language programming, particularly an extensive array of Spanish language channels, which generally cannot be found on cable and cater towards one of the highest growth segments of the U.S. population.

*Satellite companies enjoys a substantial time-to-market advantage given their ability to roll out new products nationwide upon introduction*

In addition, both companies offer integrated personal video recording enabled set-top boxes. With satellite's substantial time-to-market advantage given the inherent ubiquity of its network, new products are rolled out nationwide upon introduction, unlike cable, which must first upgrade plant neighborhood by neighborhood over an extended period of time. This also suggests a significant upfront cost element to cable's deployment of new services, as cable operators are required to invest in server equipment in every headend. With 10,000-11,000 cable headends across the country, this implies a higher capital risk and longer deployment schedule than DBS, whose centralized architecture essentially requires only one server to serve the entire country. While cable's plant rebuilds will be largely completed in urban/suburban areas within the next 12 months, the launch of new TV services will be gradual and it remains unlikely that the remaining 30% of U.S. homes that are in rural areas will ever receive advanced new services.

### Long-Term Subscriber Projections

Looking ahead, as displayed in Figure 2, we expect DBS subscriber net additions to continue to gradually decline, as a result of moderating increases in gross additions due to increasing competition from cable, combined with the effect of a growing number of disconnects from the effect of an enlarging subscriber base even with static churn. Nevertheless, the industry's subscriber base should continue to grow at an average 5% annual rate over the next six years. This growth should be accommodated by a continued modest expansion of the overall multichannel market (including cable and satellite), which among 107 million television households in the country was 85% penetrated at the end of 2001, as shown in Figure 12.

Based on our assumption that TV household growth will continue at about 1% annually and that multichannel penetration remains in the 85%-90% range through 2008, we believe there are over 100 million customers who will likely take a subscription television service. Additionally, we view the 3-4 million households that subscribe to an alternative provider other than DBS or cable as a significant potential market, which would include the 800,000 large dish, or C-band, customers that have already begun to convert; approximately 1.4 million SMATV (satellite master antenna television) customers in apartment buildings who are also being cannibalized; and 1.5 million wireless cable and other subscribers.

***We estimate a potential market of at least 10 million households available to be gained by DBS and cable operators***

Thus, we estimate a potential market of at least 10 million households available to be gained by DBS and cable operators. Based on the DBS industry's ability to sign up an effective 100% of net new multichannel subscribers last year, as modest cable subscriber gains are offset by cannibalization of other areas, we believe the continuation of that trend seems reasonable, which would support our projection of the DBS industry expanding from 18 million currently to nearly 30 million. In addition, we note that these penetrations include dual-subscriptions of DBS subscribers taking cable (which is estimated at 2-3 million) to receive local stations, and the denominator does not account for all of DBS's potential reach, such as commercial establishments, RVs, colleges, nursing homes, hospitals and businesses.

Figure 1 illustrates the dramatic shift in the composition of DBS growth toward the urban/suburban markets following the launch of local signals in early 2000. Meanwhile, growth in the rural areas has begun to stall at overall DBS penetration in these areas of 25%, likely due to the unavailability of local channels. EchoStar has targeted the potential to expand DBS penetration in rural areas through the merger with Hughes by exploiting increased channel capacity to offer local channels in all markets. This is particularly the case given that the low density characteristics of cable systems in these areas make the economic prospects for justifying cable rebuilds required to offer advanced digital video and high speed data services untenable, leaving these systems particularly vulnerable to DBS competition if local channels become available.

In alternatively segmenting the market, by the end of this year, as shown in Figure 4, we estimate there will be approximately 20 million DBS subscribers and 20 million digital cable subscribers, or 40 million digital pay TV subscribers, out of a universe of 90 million multichannel subscribers (which includes 69 million basic cable subscribers and 20 million DBS subscribers). With only 107 million TV households in the country, implying multichannel penetration of 85%-90% currently, we believe growth for cable and DBS will likely be centered on the remaining 50 million basic analog cable subscribers that don't take digital cable or DBS. To these remaining 50 million subscribers, we believe DBS offers a more compelling proposition to switch, as it has significantly more channels/better quality at the same price, while digital cable upgrades require an additional \$10 per month fee for the same increased value. This dynamic is corroborated by several recent studies that have measured consumer perception of value in the DBS product as significantly superior to analog and digital cable.

**Figure 12 U.S. Multichannel Television Subscribers**

Homes and Subscribers in Thousands

	1998A	1999A	2000A	2001A	2002E	2003E	2004E	2005E	2006E	2007E	2008E
<b>U.S. Households</b>	102,448	103,738	104,966	106,225	107,500	108,790	110,095	111,416	112,753	114,107	115,476
• % Change Year-to-Year	1.0%	1.3%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
<b>U.S. TV Households</b>	99,600	100,802	102,200	105,500	106,766	108,047	109,344	110,656	111,984	113,328	114,687
• % Change Year-to-Year	1.8%	1.2%	1.4%	3.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
• % of U.S. Households	97.2%	97.2%	97.4%	99.3%	99.3%	99.3%	99.3%	99.3%	99.3%	99.3%	99.3%
<b>Homes Passed by Cable</b>	96,000	101,400	103,200	104,748	106,214	107,595	108,994	110,411	111,846	113,300	114,773
• % Change Year-to-Year	1.5%	5.6%	1.8%	1.5%	1.4%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
• % of U.S. Households	93.7%	97.7%	98.3%	98.6%	98.8%	98.9%	99.0%	99.1%	99.2%	99.3%	99.4%
<b>Cable Subscribers</b>	66,100	67,300	68,500	68,843	69,049	69,165	69,180	69,058	68,797	68,400	67,869
• % Change Year-to-Year	2.0%	1.8%	1.8%	0.5%	0.3%	0.2%	0.0%	-0.2%	-0.4%	-0.6%	-0.8%
• % of Homes Passed by Cable	68.9%	66.4%	66.4%	65.7%	65.0%	64.3%	63.5%	62.5%	61.5%	60.4%	59.1%
<b>Net Additions</b>	1,300	1,200	1,200	342	207	115	16	(123)	(260)	(397)	(532)
<b>DBS Subscribers</b>	8,694	11,446	14,781	17,170	19,645	21,688	23,467	25,015	26,366	27,526	28,517
• % Change Year-to-Year	38.3%	31.7%	29.1%	16.2%	14.4%	10.4%	8.2%	6.6%	5.4%	4.4%	3.8%
• % of U.S. TV Households	8.7%	11.4%	14.5%	16.3%	18.4%	20.1%	21.5%	22.6%	23.5%	24.3%	24.9%
<b>DBS Subscriber Net Additions</b>	2,407	2,752	3,335	2,913	2,597	2,043	1,778	1,549	1,351	1,160	991
<b>Multichannel Subscribers</b>											
Cable	66,100	67,300	68,500	68,843	69,049	69,165	69,180	69,058	68,797	68,400	67,869
DBS	8,694	11,446	14,781	17,170	19,645	21,688	23,467	25,015	26,366	27,526	28,517
C-Band	1,921	1,648	1,196	842	500	350	250	150	75	50	30
SMATV	1,000	1,450	1,500	1,500	1,425	1,354	1,286	1,222	1,161	1,103	1,048
MMDS	950	800	700	700	600	500	350	200	150	125	100
Overbuilders/Other	200	400	550	750	900	1,050	1,200	1,300	1,375	1,450	1,500
<b>Total Multichannel Subscribers</b>	78,865	83,044	87,227	89,805	92,118	94,106	95,733	96,948	97,924	98,654	99,083
• % Change Year-to-Year	4.5%	5.3%	5.0%	3.0%	2.6%	2.2%	1.7%	1.3%	1.0%	0.7%	0.4%
• % of U.S. TV Households	79.2%	82.4%	85.3%	85.1%	86.3%	87.1%	87.8%	87.8%	87.4%	87.1%	86.4%
<b>Total Multichannel Net Additions</b>	3,414	4,179	4,183	2,578	2,314	1,987	1,627	1,212	979	730	409
<b>Market Share of Total Multichannel Subscribers</b>											
Cable	83.8%	81.0%	78.5%	76.7%	75.0%	73.5%	72.3%	71.2%	70.3%	69.3%	68.5%
DBS	11.0%	13.8%	16.9%	19.1%	21.3%	23.0%	24.5%	25.8%	26.9%	27.9%	28.8%
C-Band	2.4%	2.0%	1.4%	0.9%	0.5%	0.4%	0.3%	0.2%	0.1%	0.1%	0.0%
SMATV	1.3%	1.7%	1.7%	1.7%	1.5%	1.4%	1.3%	1.3%	1.2%	1.1%	1.1%
MMDS	1.2%	1.0%	0.8%	0.8%	0.7%	0.5%	0.4%	0.2%	0.2%	0.1%	0.1%
Other	0.3%	0.5%	0.6%	0.8%	1.0%	1.1%	1.3%	1.3%	1.4%	1.5%	1.5%

Source: Deutsche Bank Securities Inc. estimates and company information